```
1  ssh://root@103.254.67.181:10006/usr/bin/python -u /home/
   sunfengzhen/pycharm/keras_callback/callback_boston.py
2  Using TensorFlow backend.
3  ###############load dataset###############
4  the type of train data is  float64
5  the shape of train data is  (404, 13)
6  the shape of train target is  (404,)
7  the type of train target is  float64
8  train target[:10]: [15.2 42.3 50.  21.1 17.7 18.5 11.3 15.6 15.6
   14.4]
9  the shape of test data is  (102, 13)
10 the shape of test target is  (102,)
11 ###############data proecess###############
12 the shape of mean is  (13,)
13 the shape of std is  (13,)
14 ###############model train###############
15 building network ...
16
17 Layer (type)                 Output Shape              Param #
18 =================================================================
19 dense_1 (Dense)              (None, 64)                896
20
21 dense_2 (Dense)              (None, 64)                4160
22
23 dense_3 (Dense)              (None, 1)                 65
24 =================================================================
25 Total params: 5,121
26 Trainable params: 5,121
27 Non-trainable params: 0
28 _____
29 loading model ...
30 modellists length  632
31 df[0:5]
32             loss    lr  ...     val_loss
   val_mean_absolute_error
33 epoch
                    ...
```

```
34  0        508.856989  0.001  ...  502.178235             20.
338164
35  1        377.066957  0.001  ...  351.666296             16.
373666
36  2        233.135837  0.001  ...  201.051726             11.
554716
37  3        119.105036  0.001  ...  106.831212              7.
886256
38  4         66.651397  0.001  ...   66.731664              6.
196582
39
40  [5 rows x 5 columns]
41  lr 3.125e-05 at 6320 from last trained log file.
42  2019-07-10 13:50:07.530138: I tensorflow/core/platform/
    cpu_feature_guard.cc:141] Your CPU supports instructions that
    this TensorFlow binary was not compiled to use: AVX2 FMA
43  2019-07-10 13:50:07.556754: E tensorflow/stream_executor/cuda/
    cuda_driver.cc:300] failed call to culnit: CUDA_ERROR_NO_DEVICE:
    no CUDA-capable device is detected
44  2019-07-10 13:50:07.556874: I tensorflow/stream_executor/cuda/
    cuda_diagnostics.cc:163] retrieving CUDA diagnostic information
    for host: 9c0aee92cfa5
45  2019-07-10 13:50:07.556890: I tensorflow/stream_executor/cuda/
    cuda_diagnostics.cc:170] hostname: 9c0aee92cfa5
46  2019-07-10 13:50:07.556984: I tensorflow/stream_executor/cuda/
    cuda_diagnostics.cc:194] libcuda reported version is: 410.78.0
47  2019-07-10 13:50:07.557019: I tensorflow/stream_executor/cuda/
    cuda_diagnostics.cc:198] kernel reported version is: 410.78.0
48  2019-07-10 13:50:07.557078: I tensorflow/stream_executor/cuda/
    cuda_diagnostics.cc:305] kernel version seems to match DSO: 410.
    78.0
49  load model success !
50  model.metrics_names =  ['loss', 'mean_absolute_error']
51  Train on 323 samples, validate on 81 samples
52  Epoch 6321/10000
53   - 0s - loss: 0.0010 - mean_absolute_error: 0.0203 - val_loss: 31
    .8837 - val_mean_absolute_error: 3.5981
```

```
54 epoch_end_callback epoch 6320 lr 3.125e-05
55 Epoch 6322/10000
56  - 0s - loss: 7.2932e-04 - mean_absolute_error: 0.0154 - val_loss
   : 31.9343 - val_mean_absolute_error: 3.5994
57 epoch_end_callback epoch 6321 lr 3.125e-05
58 Epoch 6323/10000
59  - 0s - loss: 6.7793e-04 - mean_absolute_error: 0.0124 - val_loss
   : 31.9163 - val_mean_absolute_error: 3.5993
60 epoch_end_callback epoch 6322 lr 3.125e-05
61 Epoch 6324/10000
62  - 0s - loss: 7.9625e-04 - mean_absolute_error: 0.0171 - val_loss
   : 31.9208 - val_mean_absolute_error: 3.5970
63 epoch_end_callback epoch 6323 lr 3.125e-05
64 Epoch 6325/10000
65  - 0s - loss: 7.8860e-04 - mean_absolute_error: 0.0133 - val_loss
   : 31.9235 - val_mean_absolute_error: 3.5996
66 epoch_end_callback epoch 6324 lr 3.125e-05
67 Epoch 6326/10000
68  - 0s - loss: 5.9501e-04 - mean_absolute_error: 0.0135 - val_loss
   : 31.9354 - val_mean_absolute_error: 3.6025
69 epoch_end_callback epoch 6325 lr 3.125e-05
70 Epoch 6327/10000
71  - 0s - loss: 7.8103e-04 - mean_absolute_error: 0.0143 - val_loss
   : 31.9471 - val_mean_absolute_error: 3.6016
72 epoch_end_callback epoch 6326 lr 3.125e-05
73 Epoch 6328/10000
74  - 0s - loss: 6.6465e-04 - mean_absolute_error: 0.0145 - val_loss
   : 31.9388 - val_mean_absolute_error: 3.5994
75 epoch_end_callback epoch 6327 lr 3.125e-05
76 Epoch 6329/10000
77  - 0s - loss: 7.1510e-04 - mean_absolute_error: 0.0165 - val_loss
   : 31.9319 - val_mean_absolute_error: 3.5979
78 epoch_end_callback epoch 6328 lr 3.125e-05
79 Epoch 6330/10000
80  - 0s - loss: 7.8978e-04 - mean_absolute_error: 0.0157 - val_loss
   : 31.8918 - val_mean_absolute_error: 3.6033
81
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82  Epoch 06330: saving model to ./model/
    model_Epoch6330_val_mean_absolute_error3.603.h5
83  epoch_end_callback epoch 6329 lr 3.125e-05
84  Epoch 6331/10000
85   - 0s - loss: 7.0662e-04 - mean_absolute_error: 0.0152 -
    val_loss: 31.9141 - val_mean_absolute_error: 3.5980
86  epoch_end_callback epoch 6330 lr 3.125e-05
87  Epoch 6332/10000
88   - 0s - loss: 6.8855e-04 - mean_absolute_error: 0.0147 -
    val_loss: 31.9403 - val_mean_absolute_error: 3.6009
89  epoch_end_callback epoch 6331 lr 3.125e-05
90  Epoch 6333/10000
91   - 0s - loss: 7.2556e-04 - mean_absolute_error: 0.0160 -
    val_loss: 31.9351 - val_mean_absolute_error: 3.5976
92  epoch_end_callback epoch 6332 lr 3.125e-05
93  Epoch 6334/10000
94   - 0s - loss: 8.1289e-04 - mean_absolute_error: 0.0147 -
    val_loss: 31.9134 - val_mean_absolute_error: 3.5957
95  epoch_end_callback epoch 6333 lr 3.125e-05
96  Epoch 6335/10000
97   - 0s - loss: 8.0636e-04 - mean_absolute_error: 0.0158 -
    val_loss: 31.9441 - val_mean_absolute_error: 3.5994
98  epoch_end_callback epoch 6334 lr 3.125e-05
99  Epoch 6336/10000
100  - 0s - loss: 7.0642e-04 - mean_absolute_error: 0.0138 -
    val_loss: 31.8471 - val_mean_absolute_error: 3.5937
101 epoch_end_callback epoch 6335 lr 3.125e-05
102 Epoch 6337/10000
103  - 0s - loss: 6.2065e-04 - mean_absolute_error: 0.0131 -
    val_loss: 31.9561 - val_mean_absolute_error: 3.5987
104 epoch_end_callback epoch 6336 lr 3.125e-05
105 Epoch 6338/10000
106  - 0s - loss: 7.3865e-04 - mean_absolute_error: 0.0145 -
    val_loss: 31.9244 - val_mean_absolute_error: 3.5959
107 epoch_end_callback epoch 6337 lr 3.125e-05
108 Epoch 6339/10000
109  - 0s - loss: 7.5378e-04 - mean_absolute_error: 0.0158 -
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109  val_loss: 31.9210 - val_mean_absolute_error: 3.5996
110  epoch_end_callback epoch 6338 lr 3.125e-05
111  Epoch 6340/10000
112    - 0s - loss: 7.4399e-04 - mean_absolute_error: 0.0151 -
     val_loss: 31.9471 - val_mean_absolute_error: 3.6008
113
114  Epoch 06340: saving model to ./model/
     model_Epoch6340_val_mean_absolute_error3.601.h5
115  epoch_end_callback epoch 6339 lr 3.125e-05
116  Epoch 6341/10000
117    - 0s - loss: 8.1063e-04 - mean_absolute_error: 0.0162 -
     val_loss: 31.9590 - val_mean_absolute_error: 3.5984
118  epoch_end_callback epoch 6340 lr 3.125e-05
119  Epoch 6342/10000
120    - 0s - loss: 6.2991e-04 - mean_absolute_error: 0.0136 -
     val_loss: 31.8863 - val_mean_absolute_error: 3.5941
121  epoch_end_callback epoch 6341 lr 3.125e-05
122  Epoch 6343/10000
123    - 0s - loss: 7.4547e-04 - mean_absolute_error: 0.0144 -
     val_loss: 31.9453 - val_mean_absolute_error: 3.6001
124  epoch_end_callback epoch 6342 lr 3.125e-05
125  Epoch 6344/10000
126    - 0s - loss: 8.0527e-04 - mean_absolute_error: 0.0146 -
     val_loss: 31.9100 - val_mean_absolute_error: 3.5972
127  epoch_end_callback epoch 6343 lr 3.125e-05
128  Epoch 6345/10000
129    - 0s - loss: 6.6336e-04 - mean_absolute_error: 0.0136 -
     val_loss: 31.9292 - val_mean_absolute_error: 3.5970
130  epoch_end_callback epoch 6344 lr 3.125e-05
131  Epoch 6346/10000
132    - 0s - loss: 7.2512e-04 - mean_absolute_error: 0.0147 -
     val_loss: 31.9418 - val_mean_absolute_error: 3.5976
133  epoch_end_callback epoch 6345 lr 3.125e-05
134  Epoch 6347/10000
135    - 0s - loss: 7.3349e-04 - mean_absolute_error: 0.0158 -
     val_loss: 31.8931 - val_mean_absolute_error: 3.5968
136  epoch_end_callback epoch 6346 lr 3.125e-05
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137  Epoch 6348/10000
138   - 0s - loss: 6.7397e-04 - mean_absolute_error: 0.0145 -
     val_loss: 31.9005 - val_mean_absolute_error: 3.5962
139  epoch_end_callback epoch 6347 lr 3.125e-05
140  Epoch 6349/10000
141   - 0s - loss: 7.4743e-04 - mean_absolute_error: 0.0156 -
     val_loss: 31.9764 - val_mean_absolute_error: 3.5989
142  epoch_end_callback epoch 6348 lr 3.125e-05
143  Epoch 6350/10000
144   - 0s - loss: 8.2654e-04 - mean_absolute_error: 0.0164 -
     val_loss: 31.8947 - val_mean_absolute_error: 3.5937
145
146  Epoch 06350: saving model to ./model/
     model_Epoch6350_val_mean_absolute_error3.594.h5
147  epoch_end_callback epoch 6349 lr 3.125e-05
148  Epoch 6351/10000
149   - 0s - loss: 6.0227e-04 - mean_absolute_error: 0.0138 -
     val_loss: 31.8941 - val_mean_absolute_error: 3.5976
150  epoch_end_callback epoch 6350 lr 3.125e-05
151  Epoch 6352/10000
152   - 0s - loss: 7.6624e-04 - mean_absolute_error: 0.0162 -
     val_loss: 31.9035 - val_mean_absolute_error: 3.6000
153  epoch_end_callback epoch 6351 lr 3.125e-05
154  Epoch 6353/10000
155   - 0s - loss: 6.7272e-04 - mean_absolute_error: 0.0148 -
     val_loss: 31.9634 - val_mean_absolute_error: 3.6000
156  epoch_end_callback epoch 6352 lr 3.125e-05
157  Epoch 6354/10000
158   - 0s - loss: 8.0749e-04 - mean_absolute_error: 0.0177 -
     val_loss: 31.9930 - val_mean_absolute_error: 3.6017
159  epoch_end_callback epoch 6353 lr 3.125e-05
160  Epoch 6355/10000
161   - 0s - loss: 6.0512e-04 - mean_absolute_error: 0.0135 -
     val_loss: 31.9033 - val_mean_absolute_error: 3.5970
162  epoch_end_callback epoch 6354 lr 3.125e-05
163  Epoch 6356/10000
164   - 0s - loss: 7.6074e-04 - mean_absolute_error: 0.0157 -
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164  val_loss: 31.8938 - val_mean_absolute_error: 3.5976
165  epoch_end_callback epoch 6355 lr 3.125e-05
166  Epoch 6357/10000
167   - 0s - loss: 6.9954e-04 - mean_absolute_error: 0.0152 -
     val_loss: 31.9196 - val_mean_absolute_error: 3.5989
168  epoch_end_callback epoch 6356 lr 3.125e-05
169  Epoch 6358/10000
170   - 0s - loss: 8.5423e-04 - mean_absolute_error: 0.0159 -
     val_loss: 31.9491 - val_mean_absolute_error: 3.5988
171  epoch_end_callback epoch 6357 lr 3.125e-05
172  Epoch 6359/10000
173   - 0s - loss: 6.8214e-04 - mean_absolute_error: 0.0137 -
     val_loss: 31.9760 - val_mean_absolute_error: 3.5987
174  epoch_end_callback epoch 6358 lr 3.125e-05
175  Epoch 6360/10000
176   - 0s - loss: 7.2111e-04 - mean_absolute_error: 0.0155 -
     val_loss: 31.9177 - val_mean_absolute_error: 3.6008
177
178  Epoch 06360: saving model to ./model/
     model_Epoch6360_val_mean_absolute_error3.601.h5
179  epoch_end_callback epoch 6359 lr 3.125e-05
180  Epoch 6361/10000
181   - 0s - loss: 7.6417e-04 - mean_absolute_error: 0.0152 -
     val_loss: 31.9226 - val_mean_absolute_error: 3.5982
182  epoch_end_callback epoch 6360 lr 3.125e-05
183  Epoch 6362/10000
184   - 0s - loss: 6.5213e-04 - mean_absolute_error: 0.0128 -
     val_loss: 31.8981 - val_mean_absolute_error: 3.5966
185  epoch_end_callback epoch 6361 lr 3.125e-05
186  Epoch 6363/10000
187   - 0s - loss: 7.1639e-04 - mean_absolute_error: 0.0143 -
     val_loss: 31.8542 - val_mean_absolute_error: 3.5943
188  epoch_end_callback epoch 6362 lr 3.125e-05
189  Epoch 6364/10000
190   - 0s - loss: 7.4300e-04 - mean_absolute_error: 0.0151 -
     val_loss: 31.9524 - val_mean_absolute_error: 3.5981
191  epoch_end_callback epoch 6363 lr 3.125e-05
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192  Epoch 6365/10000
193   - 0s - loss: 7.3615e-04 - mean_absolute_error: 0.0150 -
     val_loss: 31.9100 - val_mean_absolute_error: 3.5975
194  epoch_end_callback epoch 6364 lr 3.125e-05
195  Epoch 6366/10000
196   - 0s - loss: 7.5025e-04 - mean_absolute_error: 0.0149 -
     val_loss: 31.9365 - val_mean_absolute_error: 3.6006
197  epoch_end_callback epoch 6365 lr 3.125e-05
198  Epoch 6367/10000
199   - 0s - loss: 7.2831e-04 - mean_absolute_error: 0.0147 -
     val_loss: 31.9333 - val_mean_absolute_error: 3.6009
200  epoch_end_callback epoch 6366 lr 3.125e-05
201  Epoch 6368/10000
202   - 0s - loss: 6.9756e-04 - mean_absolute_error: 0.0145 -
     val_loss: 31.9041 - val_mean_absolute_error: 3.5965
203  epoch_end_callback epoch 6367 lr 3.125e-05
204  Epoch 6369/10000
205   - 0s - loss: 6.5466e-04 - mean_absolute_error: 0.0136 -
     val_loss: 31.9313 - val_mean_absolute_error: 3.5976
206  epoch_end_callback epoch 6368 lr 3.125e-05
207  Epoch 6370/10000
208   - 0s - loss: 7.7707e-04 - mean_absolute_error: 0.0156 -
     val_loss: 31.8907 - val_mean_absolute_error: 3.5954
209
210  Epoch 06370: saving model to ./model/
     model_Epoch6370_val_mean_absolute_error3.595.h5
211  epoch_end_callback epoch 6369 lr 3.125e-05
212  Epoch 6371/10000
213   - 0s - loss: 7.5950e-04 - mean_absolute_error: 0.0165 -
     val_loss: 31.9614 - val_mean_absolute_error: 3.6009
214  epoch_end_callback epoch 6370 lr 3.125e-05
215  Epoch 6372/10000
216   - 0s - loss: 6.6750e-04 - mean_absolute_error: 0.0134 -
     val_loss: 31.9027 - val_mean_absolute_error: 3.5986
217  epoch_end_callback epoch 6371 lr 3.125e-05
218  Epoch 6373/10000
219   - 0s - loss: 7.1300e-04 - mean_absolute_error: 0.0153 -
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219  val_loss: 31.8848 - val_mean_absolute_error: 3.5996
220  epoch_end_callback epoch 6372 lr 3.125e-05
221  Epoch 6374/10000
222   - 0s - loss: 7.2696e-04 - mean_absolute_error: 0.0146 -
     val_loss: 31.8768 - val_mean_absolute_error: 3.5988
223  epoch_end_callback epoch 6373 lr 3.125e-05
224  Epoch 6375/10000
225   - 0s - loss: 8.1041e-04 - mean_absolute_error: 0.0162 -
     val_loss: 31.9641 - val_mean_absolute_error: 3.5978
226  epoch_end_callback epoch 6374 lr 3.125e-05
227  Epoch 6376/10000
228   - 0s - loss: 6.2746e-04 - mean_absolute_error: 0.0129 -
     val_loss: 31.8990 - val_mean_absolute_error: 3.5963
229  epoch_end_callback epoch 6375 lr 3.125e-05
230  Epoch 6377/10000
231   - 0s - loss: 7.0860e-04 - mean_absolute_error: 0.0151 -
     val_loss: 31.9331 - val_mean_absolute_error: 3.6008
232  epoch_end_callback epoch 6376 lr 3.125e-05
233  Epoch 6378/10000
234   - 0s - loss: 7.7952e-04 - mean_absolute_error: 0.0168 -
     val_loss: 31.9535 - val_mean_absolute_error: 3.5999
235  epoch_end_callback epoch 6377 lr 3.125e-05
236  Epoch 6379/10000
237   - 0s - loss: 6.6243e-04 - mean_absolute_error: 0.0138 -
     val_loss: 31.8771 - val_mean_absolute_error: 3.5979
238  epoch_end_callback epoch 6378 lr 3.125e-05
239  Epoch 6380/10000
240   - 0s - loss: 6.8578e-04 - mean_absolute_error: 0.0156 -
     val_loss: 31.9423 - val_mean_absolute_error: 3.5973
241
242  Epoch 06380: saving model to ./model/
     model_Epoch6380_val_mean_absolute_error3.597.h5
243  epoch_end_callback epoch 6379 lr 3.125e-05
244  Epoch 6381/10000
245   - 0s - loss: 5.8495e-04 - mean_absolute_error: 0.0139 -
     val_loss: 31.9550 - val_mean_absolute_error: 3.6013
246  epoch_end_callback epoch 6380 lr 3.125e-05
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247  Epoch 6382/10000
248   - 0s - loss: 7.5611e-04 - mean_absolute_error: 0.0153 -
      val_loss: 31.9324 - val_mean_absolute_error: 3.6026
249  epoch_end_callback epoch 6381 lr 3.125e-05
250  Epoch 6383/10000
251   - 0s - loss: 7.7297e-04 - mean_absolute_error: 0.0162 -
      val_loss: 31.9164 - val_mean_absolute_error: 3.5972
252  epoch_end_callback epoch 6382 lr 3.125e-05
253  Epoch 6384/10000
254   - 0s - loss: 6.4767e-04 - mean_absolute_error: 0.0146 -
      val_loss: 31.9234 - val_mean_absolute_error: 3.5998
255  epoch_end_callback epoch 6383 lr 3.125e-05
256  Epoch 6385/10000
257   - 0s - loss: 7.2340e-04 - mean_absolute_error: 0.0140 -
      val_loss: 31.9527 - val_mean_absolute_error: 3.5973
258  epoch_end_callback epoch 6384 lr 3.125e-05
259  Epoch 6386/10000
260   - 0s - loss: 6.7829e-04 - mean_absolute_error: 0.0156 -
      val_loss: 31.8878 - val_mean_absolute_error: 3.5944
261  epoch_end_callback epoch 6385 lr 3.125e-05
262  Epoch 6387/10000
263   - 0s - loss: 6.6743e-04 - mean_absolute_error: 0.0156 -
      val_loss: 31.9636 - val_mean_absolute_error: 3.5993
264  epoch_end_callback epoch 6386 lr 3.125e-05
265  Epoch 6388/10000
266   - 0s - loss: 8.0572e-04 - mean_absolute_error: 0.0157 -
      val_loss: 31.9372 - val_mean_absolute_error: 3.5970
267  epoch_end_callback epoch 6387 lr 3.125e-05
268  Epoch 6389/10000
269   - 0s - loss: 5.7662e-04 - mean_absolute_error: 0.0135 -
      val_loss: 31.8606 - val_mean_absolute_error: 3.5958
270  epoch_end_callback epoch 6388 lr 3.125e-05
271  Epoch 6390/10000
272   - 0s - loss: 7.1239e-04 - mean_absolute_error: 0.0153 -
      val_loss: 31.9704 - val_mean_absolute_error: 3.5988
273
274  Epoch 06390: saving model to ./model/
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274  model_Epoch6390_val_mean_absolute_error3.599.h5
275  epoch_end_callback epoch 6389 lr 3.125e-05
276  Epoch 6391/10000
277   - 0s - loss: 8.7166e-04 - mean_absolute_error: 0.0158 -
     val_loss: 31.9856 - val_mean_absolute_error: 3.6014
278  epoch_end_callback epoch 6390 lr 3.125e-05
279  Epoch 6392/10000
280   - 0s - loss: 6.7819e-04 - mean_absolute_error: 0.0128 -
     val_loss: 31.9217 - val_mean_absolute_error: 3.6007
281  epoch_end_callback epoch 6391 lr 3.125e-05
282  Epoch 6393/10000
283   - 0s - loss: 7.7135e-04 - mean_absolute_error: 0.0152 -
     val_loss: 31.9286 - val_mean_absolute_error: 3.5937
284  epoch_end_callback epoch 6392 lr 3.125e-05
285  Epoch 6394/10000
286   - 0s - loss: 7.6984e-04 - mean_absolute_error: 0.0163 -
     val_loss: 31.9651 - val_mean_absolute_error: 3.5995
287  epoch_end_callback epoch 6393 lr 3.125e-05
288  Epoch 6395/10000
289   - 0s - loss: 6.3467e-04 - mean_absolute_error: 0.0147 -
     val_loss: 31.9867 - val_mean_absolute_error: 3.6015
290  epoch_end_callback epoch 6394 lr 3.125e-05
291  Epoch 6396/10000
292   - 0s - loss: 6.3855e-04 - mean_absolute_error: 0.0139 -
     val_loss: 31.9341 - val_mean_absolute_error: 3.5968
293  epoch_end_callback epoch 6395 lr 3.125e-05
294  Epoch 6397/10000
295   - 0s - loss: 8.1567e-04 - mean_absolute_error: 0.0157 -
     val_loss: 31.9354 - val_mean_absolute_error: 3.5980
296  epoch_end_callback epoch 6396 lr 3.125e-05
297  Epoch 6398/10000
298   - 0s - loss: 8.2299e-04 - mean_absolute_error: 0.0152 -
     val_loss: 31.9342 - val_mean_absolute_error: 3.5993
299  epoch_end_callback epoch 6397 lr 3.125e-05
300  Epoch 6399/10000
301   - 0s - loss: 7.1492e-04 - mean_absolute_error: 0.0142 -
     val_loss: 31.8884 - val_mean_absolute_error: 3.5958
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302  epoch_end_callback epoch 6398 lr 3.125e-05
303  Epoch 6400/10000
304   - 0s - loss: 6.7909e-04 - mean_absolute_error: 0.0144 -
     val_loss: 31.9165 - val_mean_absolute_error: 3.5978
305
306  Epoch 06400: saving model to ./model/
     model_Epoch6400_val_mean_absolute_error3.598.h5
307  epoch_end_callback epoch 6399 lr 3.125e-05
308  Epoch 6401/10000
309   - 0s - loss: 6.7619e-04 - mean_absolute_error: 0.0143 -
     val_loss: 31.9478 - val_mean_absolute_error: 3.5994
310  epoch_end_callback epoch 6400 lr 3.125e-05
311  Epoch 6402/10000
312   - 0s - loss: 7.3010e-04 - mean_absolute_error: 0.0147 -
     val_loss: 31.9052 - val_mean_absolute_error: 3.5987
313  epoch_end_callback epoch 6401 lr 3.125e-05
314  Epoch 6403/10000
315   - 0s - loss: 8.2897e-04 - mean_absolute_error: 0.0151 -
     val_loss: 31.9781 - val_mean_absolute_error: 3.6006
316  epoch_end_callback epoch 6402 lr 3.125e-05
317  Epoch 6404/10000
318   - 0s - loss: 7.1838e-04 - mean_absolute_error: 0.0142 -
     val_loss: 31.8709 - val_mean_absolute_error: 3.5981
319  epoch_end_callback epoch 6403 lr 3.125e-05
320  Epoch 6405/10000
321   - 0s - loss: 8.1820e-04 - mean_absolute_error: 0.0171 -
     val_loss: 31.9432 - val_mean_absolute_error: 3.5996
322  epoch_end_callback epoch 6404 lr 3.125e-05
323  Epoch 6406/10000
324   - 0s - loss: 6.3161e-04 - mean_absolute_error: 0.0123 -
     val_loss: 31.9513 - val_mean_absolute_error: 3.5993
325  epoch_end_callback epoch 6405 lr 3.125e-05
326  Epoch 6407/10000
327   - 0s - loss: 6.9238e-04 - mean_absolute_error: 0.0156 -
     val_loss: 31.9465 - val_mean_absolute_error: 3.6010
328  epoch_end_callback epoch 6406 lr 3.125e-05
329  Epoch 6408/10000
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330    - 0s - loss: 8.3416e-04 - mean_absolute_error: 0.0171 -
       val_loss: 31.9769 - val_mean_absolute_error: 3.6011
331  epoch_end_callback epoch 6407 lr 3.125e-05
332  Epoch 6409/10000
333    - 0s - loss: 6.8757e-04 - mean_absolute_error: 0.0137 -
       val_loss: 31.8933 - val_mean_absolute_error: 3.5969
334  epoch_end_callback epoch 6408 lr 3.125e-05
335  Epoch 6410/10000
336    - 0s - loss: 7.7733e-04 - mean_absolute_error: 0.0155 -
       val_loss: 31.9125 - val_mean_absolute_error: 3.6037
337
338  Epoch 06410: saving model to ./model/
       model_Epoch6410_val_mean_absolute_error3.604.h5
339  epoch_end_callback epoch 6409 lr 3.125e-05
340  Epoch 6411/10000
341    - 0s - loss: 6.7947e-04 - mean_absolute_error: 0.0144 -
       val_loss: 31.9108 - val_mean_absolute_error: 3.5949
342  epoch_end_callback epoch 6410 lr 3.125e-05
343  Epoch 6412/10000
344    - 0s - loss: 7.0595e-04 - mean_absolute_error: 0.0159 -
       val_loss: 31.9392 - val_mean_absolute_error: 3.5970
345  epoch_end_callback epoch 6411 lr 3.125e-05
346  Epoch 6413/10000
347    - 0s - loss: 6.4300e-04 - mean_absolute_error: 0.0129 -
       val_loss: 31.9147 - val_mean_absolute_error: 3.6021
348  epoch_end_callback epoch 6412 lr 3.125e-05
349  Epoch 6414/10000
350    - 0s - loss: 7.9167e-04 - mean_absolute_error: 0.0167 -
       val_loss: 31.8948 - val_mean_absolute_error: 3.5981
351  epoch_end_callback epoch 6413 lr 3.125e-05
352  Epoch 6415/10000
353    - 0s - loss: 5.3139e-04 - mean_absolute_error: 0.0140 -
       val_loss: 31.7830 - val_mean_absolute_error: 3.5958
354  epoch_end_callback epoch 6414 lr 3.125e-05
355  Epoch 6416/10000
356    - 0s - loss: 0.0010 - mean_absolute_error: 0.0153 - val_loss:
       31.9436 - val_mean_absolute_error: 3.5983
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357  epoch_end_callback epoch 6415 lr 3.125e-05
358  Epoch 6417/10000
359   - 0s - loss: 8.0909e-04 - mean_absolute_error: 0.0146 -
     val_loss: 31.9479 - val_mean_absolute_error: 3.5988
360  epoch_end_callback epoch 6416 lr 3.125e-05
361  Epoch 6418/10000
362   - 0s - loss: 5.8713e-04 - mean_absolute_error: 0.0120 -
     val_loss: 31.9684 - val_mean_absolute_error: 3.5992
363  epoch_end_callback epoch 6417 lr 3.125e-05
364  Epoch 6419/10000
365   - 0s - loss: 7.5404e-04 - mean_absolute_error: 0.0162 -
     val_loss: 31.9434 - val_mean_absolute_error: 3.5993
366  epoch_end_callback epoch 6418 lr 3.125e-05
367  Epoch 6420/10000
368   - 0s - loss: 6.9702e-04 - mean_absolute_error: 0.0131 -
     val_loss: 32.0011 - val_mean_absolute_error: 3.6001
369
370  Epoch 06420: saving model to ./model/
     model_Epoch6420_val_mean_absolute_error3.600.h5
371  epoch_end_callback epoch 6419 lr 3.125e-05
372  Epoch 6421/10000
373   - 0s - loss: 8.0667e-04 - mean_absolute_error: 0.0147 -
     val_loss: 31.9310 - val_mean_absolute_error: 3.5999
374  epoch_end_callback epoch 6420 lr 3.125e-05
375  Epoch 6422/10000
376   - 0s - loss: 6.6343e-04 - mean_absolute_error: 0.0137 -
     val_loss: 31.9675 - val_mean_absolute_error: 3.6019
377  epoch_end_callback epoch 6421 lr 3.125e-05
378  Epoch 6423/10000
379   - 0s - loss: 8.3338e-04 - mean_absolute_error: 0.0170 -
     val_loss: 31.9122 - val_mean_absolute_error: 3.5986
380  epoch_end_callback epoch 6422 lr 3.125e-05
381  Epoch 6424/10000
382   - 0s - loss: 6.5506e-04 - mean_absolute_error: 0.0132 -
     val_loss: 31.9341 - val_mean_absolute_error: 3.5970
383  epoch_end_callback epoch 6423 lr 3.125e-05
384  Epoch 6425/10000
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385   - 0s - loss: 7.0392e-04 - mean_absolute_error: 0.0162 - val_loss: 31.9486 - val_mean_absolute_error: 3.6008
386 epoch_end_callback epoch 6424 lr 3.125e-05
387 Epoch 6426/10000
388   - 0s - loss: 7.2652e-04 - mean_absolute_error: 0.0150 - val_loss: 31.8935 - val_mean_absolute_error: 3.5963
389 epoch_end_callback epoch 6425 lr 3.125e-05
390 Epoch 6427/10000
391   - 0s - loss: 7.1693e-04 - mean_absolute_error: 0.0157 - val_loss: 31.9578 - val_mean_absolute_error: 3.6008
392 epoch_end_callback epoch 6426 lr 3.125e-05
393 Epoch 6428/10000
394   - 0s - loss: 7.6465e-04 - mean_absolute_error: 0.0151 - val_loss: 31.9504 - val_mean_absolute_error: 3.5995
395 epoch_end_callback epoch 6427 lr 3.125e-05
396 Epoch 6429/10000
397   - 0s - loss: 7.8690e-04 - mean_absolute_error: 0.0164 - val_loss: 31.9441 - val_mean_absolute_error: 3.6001
398 epoch_end_callback epoch 6428 lr 3.125e-05
399 Epoch 6430/10000
400   - 0s - loss: 6.8465e-04 - mean_absolute_error: 0.0136 - val_loss: 31.9369 - val_mean_absolute_error: 3.5989
401
402 Epoch 06430: saving model to ./model/ model_Epoch6430_val_mean_absolute_error3.599.h5
403 epoch_end_callback epoch 6429 lr 3.125e-05
404 Epoch 6431/10000
405   - 0s - loss: 7.2870e-04 - mean_absolute_error: 0.0138 - val_loss: 31.9576 - val_mean_absolute_error: 3.6033
406 epoch_end_callback epoch 6430 lr 3.125e-05
407 Epoch 6432/10000
408   - 0s - loss: 7.5118e-04 - mean_absolute_error: 0.0152 - val_loss: 31.8983 - val_mean_absolute_error: 3.5940
409 epoch_end_callback epoch 6431 lr 3.125e-05
410 Epoch 6433/10000
411   - 0s - loss: 7.0833e-04 - mean_absolute_error: 0.0151 - val_loss: 31.9549 - val_mean_absolute_error: 3.5999

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412 epoch_end_callback epoch 6432 lr 3.125e-05
413 Epoch 6434/10000
414  - 0s - loss: 7.5975e-04 - mean_absolute_error: 0.0157 -
    val_loss: 31.9676 - val_mean_absolute_error: 3.6012
415 epoch_end_callback epoch 6433 lr 3.125e-05
416 Epoch 6435/10000
417  - 0s - loss: 7.2091e-04 - mean_absolute_error: 0.0143 -
    val_loss: 31.9577 - val_mean_absolute_error: 3.5997
418 epoch_end_callback epoch 6434 lr 3.125e-05
419 Epoch 6436/10000
420  - 0s - loss: 7.9523e-04 - mean_absolute_error: 0.0160 -
    val_loss: 31.9792 - val_mean_absolute_error: 3.5969
421 epoch_end_callback epoch 6435 lr 3.125e-05
422 Epoch 6437/10000
423  - 0s - loss: 6.6373e-04 - mean_absolute_error: 0.0135 -
    val_loss: 31.8791 - val_mean_absolute_error: 3.5979
424 epoch_end_callback epoch 6436 lr 3.125e-05
425 Epoch 6438/10000
426  - 0s - loss: 6.8604e-04 - mean_absolute_error: 0.0150 -
    val_loss: 31.9546 - val_mean_absolute_error: 3.6000
427 epoch_end_callback epoch 6437 lr 3.125e-05
428 Epoch 6439/10000
429  - 0s - loss: 6.2339e-04 - mean_absolute_error: 0.0128 -
    val_loss: 31.9369 - val_mean_absolute_error: 3.5968
430 epoch_end_callback epoch 6438 lr 3.125e-05
431 Epoch 6440/10000
432  - 0s - loss: 6.9976e-04 - mean_absolute_error: 0.0154 -
    val_loss: 31.9633 - val_mean_absolute_error: 3.6015
433
434 Epoch 06440: saving model to ./model/
    model_Epoch6440_val_mean_absolute_error3.602.h5
435 epoch_end_callback epoch 6439 lr 3.125e-05
436 Epoch 6441/10000
437  - 0s - loss: 8.3831e-04 - mean_absolute_error: 0.0175 -
    val_loss: 32.0342 - val_mean_absolute_error: 3.6042
438 epoch_end_callback epoch 6440 lr 3.125e-05
439 Epoch 6442/10000
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440    - 0s - loss: 7.1438e-04 - mean_absolute_error: 0.0143 -
       val_loss: 31.9555 - val_mean_absolute_error: 3.6016
441  epoch_end_callback epoch 6441 lr 3.125e-05
442  Epoch 6443/10000
443    - 0s - loss: 6.9736e-04 - mean_absolute_error: 0.0146 -
       val_loss: 31.9681 - val_mean_absolute_error: 3.6017
444  epoch_end_callback epoch 6442 lr 3.125e-05
445  Epoch 6444/10000
446    - 0s - loss: 7.8658e-04 - mean_absolute_error: 0.0158 -
       val_loss: 31.9749 - val_mean_absolute_error: 3.5998
447  epoch_end_callback epoch 6443 lr 3.125e-05
448  Epoch 6445/10000
449    - 0s - loss: 7.4072e-04 - mean_absolute_error: 0.0155 -
       val_loss: 31.9338 - val_mean_absolute_error: 3.5993
450  epoch_end_callback epoch 6444 lr 3.125e-05
451  Epoch 6446/10000
452    - 0s - loss: 5.6311e-04 - mean_absolute_error: 0.0132 -
       val_loss: 31.8829 - val_mean_absolute_error: 3.5991
453  epoch_end_callback epoch 6445 lr 3.125e-05
454  Epoch 6447/10000
455    - 0s - loss: 6.7978e-04 - mean_absolute_error: 0.0150 -
       val_loss: 31.9296 - val_mean_absolute_error: 3.5990
456  epoch_end_callback epoch 6446 lr 3.125e-05
457  Epoch 6448/10000
458    - 0s - loss: 7.1053e-04 - mean_absolute_error: 0.0142 -
       val_loss: 31.9084 - val_mean_absolute_error: 3.6018
459  epoch_end_callback epoch 6447 lr 3.125e-05
460  Epoch 6449/10000
461    - 0s - loss: 7.1895e-04 - mean_absolute_error: 0.0161 -
       val_loss: 31.9069 - val_mean_absolute_error: 3.6017
462  epoch_end_callback epoch 6448 lr 3.125e-05
463  Epoch 6450/10000
464    - 0s - loss: 6.0933e-04 - mean_absolute_error: 0.0140 -
       val_loss: 31.9514 - val_mean_absolute_error: 3.6013
465
466  Epoch 06450: saving model to ./model/
     model_Epoch6450_val_mean_absolute_error3.601.h5
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467  epoch_end_callback epoch 6449 lr 3.125e-05
468  Epoch 6451/10000
469   - 0s - loss: 6.0670e-04 - mean_absolute_error: 0.0146 -
     val_loss: 31.9202 - val_mean_absolute_error: 3.5991
470  epoch_end_callback epoch 6450 lr 3.125e-05
471  Epoch 6452/10000
472   - 0s - loss: 8.3384e-04 - mean_absolute_error: 0.0158 -
     val_loss: 31.9462 - val_mean_absolute_error: 3.5985
473  epoch_end_callback epoch 6451 lr 3.125e-05
474  Epoch 6453/10000
475   - 0s - loss: 8.0149e-04 - mean_absolute_error: 0.0143 -
     val_loss: 32.0453 - val_mean_absolute_error: 3.6034
476  epoch_end_callback epoch 6452 lr 3.125e-05
477  Epoch 6454/10000
478   - 0s - loss: 7.3901e-04 - mean_absolute_error: 0.0159 -
     val_loss: 31.9641 - val_mean_absolute_error: 3.6006
479  epoch_end_callback epoch 6453 lr 3.125e-05
480  Epoch 6455/10000
481   - 0s - loss: 5.9020e-04 - mean_absolute_error: 0.0132 -
     val_loss: 32.0329 - val_mean_absolute_error: 3.6018
482  epoch_end_callback epoch 6454 lr 3.125e-05
483  Epoch 6456/10000
484   - 0s - loss: 7.4855e-04 - mean_absolute_error: 0.0161 -
     val_loss: 32.0025 - val_mean_absolute_error: 3.6006
485  epoch_end_callback epoch 6455 lr 3.125e-05
486  Epoch 6457/10000
487   - 0s - loss: 7.7292e-04 - mean_absolute_error: 0.0153 -
     val_loss: 31.9689 - val_mean_absolute_error: 3.6004
488  epoch_end_callback epoch 6456 lr 3.125e-05
489  Epoch 6458/10000
490   - 0s - loss: 7.7115e-04 - mean_absolute_error: 0.0161 -
     val_loss: 31.9145 - val_mean_absolute_error: 3.6014
491  epoch_end_callback epoch 6457 lr 3.125e-05
492  Epoch 6459/10000
493   - 0s - loss: 6.6970e-04 - mean_absolute_error: 0.0142 -
     val_loss: 31.9298 - val_mean_absolute_error: 3.5974
494  epoch_end_callback epoch 6458 lr 3.125e-05
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495  Epoch 6460/10000
496   - 0s - loss: 7.5601e-04 - mean_absolute_error: 0.0165 -
     val_loss: 31.9238 - val_mean_absolute_error: 3.5992
497
498  Epoch 06460: saving model to ./model/
     model_Epoch6460_val_mean_absolute_error3.599.h5
499  epoch_end_callback epoch 6459 lr 3.125e-05
500  Epoch 6461/10000
501   - 0s - loss: 6.7642e-04 - mean_absolute_error: 0.0142 -
     val_loss: 31.9704 - val_mean_absolute_error: 3.6037
502  epoch_end_callback epoch 6460 lr 3.125e-05
503  Epoch 6462/10000
504   - 0s - loss: 6.7776e-04 - mean_absolute_error: 0.0152 -
     val_loss: 31.9324 - val_mean_absolute_error: 3.6031
505  epoch_end_callback epoch 6461 lr 3.125e-05
506  Epoch 6463/10000
507   - 0s - loss: 7.0724e-04 - mean_absolute_error: 0.0147 -
     val_loss: 31.9600 - val_mean_absolute_error: 3.5990
508  epoch_end_callback epoch 6462 lr 3.125e-05
509  Epoch 6464/10000
510   - 0s - loss: 6.6503e-04 - mean_absolute_error: 0.0140 -
     val_loss: 31.9614 - val_mean_absolute_error: 3.6027
511  epoch_end_callback epoch 6463 lr 3.125e-05
512  Epoch 6465/10000
513   - 0s - loss: 8.1204e-04 - mean_absolute_error: 0.0158 -
     val_loss: 31.9711 - val_mean_absolute_error: 3.6013
514  epoch_end_callback epoch 6464 lr 3.125e-05
515  Epoch 6466/10000
516   - 0s - loss: 7.7774e-04 - mean_absolute_error: 0.0147 -
     val_loss: 31.9765 - val_mean_absolute_error: 3.6029
517  epoch_end_callback epoch 6465 lr 3.125e-05
518  Epoch 6467/10000
519   - 0s - loss: 5.9818e-04 - mean_absolute_error: 0.0129 -
     val_loss: 31.9775 - val_mean_absolute_error: 3.6024
520  epoch_end_callback epoch 6466 lr 3.125e-05
521  Epoch 6468/10000
522   - 0s - loss: 7.1433e-04 - mean_absolute_error: 0.0155 -
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522  val_loss: 31.9563 - val_mean_absolute_error: 3.5995
523  epoch_end_callback epoch 6467 lr 3.125e-05
524  Epoch 6469/10000
525   - 0s - loss: 7.1088e-04 - mean_absolute_error: 0.0144 -
     val_loss: 31.9442 - val_mean_absolute_error: 3.6008
526  epoch_end_callback epoch 6468 lr 3.125e-05
527  Epoch 6470/10000
528   - 0s - loss: 7.0696e-04 - mean_absolute_error: 0.0147 -
     val_loss: 31.9823 - val_mean_absolute_error: 3.6017
529
530  Epoch 06470: saving model to ./model/
     model_Epoch6470_val_mean_absolute_error3.602.h5
531  epoch_end_callback epoch 6469 lr 3.125e-05
532  Epoch 6471/10000
533   - 0s - loss: 7.2499e-04 - mean_absolute_error: 0.0153 -
     val_loss: 31.9690 - val_mean_absolute_error: 3.6030
534  epoch_end_callback epoch 6470 lr 3.125e-05
535  Epoch 6472/10000
536   - 0s - loss: 6.8415e-04 - mean_absolute_error: 0.0143 -
     val_loss: 31.9669 - val_mean_absolute_error: 3.6037
537  epoch_end_callback epoch 6471 lr 3.125e-05
538  Epoch 6473/10000
539   - 0s - loss: 7.0534e-04 - mean_absolute_error: 0.0153 -
     val_loss: 31.9271 - val_mean_absolute_error: 3.5998
540  epoch_end_callback epoch 6472 lr 3.125e-05
541  Epoch 6474/10000
542   - 0s - loss: 7.5208e-04 - mean_absolute_error: 0.0148 -
     val_loss: 31.9842 - val_mean_absolute_error: 3.6012
543  epoch_end_callback epoch 6473 lr 3.125e-05
544  Epoch 6475/10000
545   - 0s - loss: 7.0886e-04 - mean_absolute_error: 0.0128 -
     val_loss: 32.0053 - val_mean_absolute_error: 3.6026
546  epoch_end_callback epoch 6474 lr 3.125e-05
547  Epoch 6476/10000
548   - 0s - loss: 6.8681e-04 - mean_absolute_error: 0.0162 -
     val_loss: 31.9789 - val_mean_absolute_error: 3.6024
549  epoch_end_callback epoch 6475 lr 3.125e-05
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550  Epoch 6477/10000
551   - 0s - loss: 7.7181e-04 - mean_absolute_error: 0.0160 -
     val_loss: 31.9592 - val_mean_absolute_error: 3.5997
552  epoch_end_callback epoch 6476 lr 3.125e-05
553  Epoch 6478/10000
554   - 0s - loss: 6.2310e-04 - mean_absolute_error: 0.0147 -
     val_loss: 31.9204 - val_mean_absolute_error: 3.6002
555  epoch_end_callback epoch 6477 lr 3.125e-05
556  Epoch 6479/10000
557   - 0s - loss: 7.5104e-04 - mean_absolute_error: 0.0132 -
     val_loss: 31.9148 - val_mean_absolute_error: 3.6004
558  epoch_end_callback epoch 6478 lr 3.125e-05
559  Epoch 6480/10000
560   - 0s - loss: 7.2769e-04 - mean_absolute_error: 0.0155 -
     val_loss: 31.9833 - val_mean_absolute_error: 3.5982
561
562  Epoch 06480: saving model to ./model/
     model_Epoch6480_val_mean_absolute_error3.598.h5
563  epoch_end_callback epoch 6479 lr 3.125e-05
564  Epoch 6481/10000
565   - 0s - loss: 6.9218e-04 - mean_absolute_error: 0.0150 -
     val_loss: 31.9718 - val_mean_absolute_error: 3.6029
566  epoch_end_callback epoch 6480 lr 3.125e-05
567  Epoch 6482/10000
568   - 0s - loss: 6.7891e-04 - mean_absolute_error: 0.0149 -
     val_loss: 31.9732 - val_mean_absolute_error: 3.6000
569  epoch_end_callback epoch 6481 lr 3.125e-05
570  Epoch 6483/10000
571   - 0s - loss: 6.9693e-04 - mean_absolute_error: 0.0153 -
     val_loss: 32.0247 - val_mean_absolute_error: 3.6041
572  epoch_end_callback epoch 6482 lr 3.125e-05
573  Epoch 6484/10000
574   - 0s - loss: 6.8947e-04 - mean_absolute_error: 0.0147 -
     val_loss: 31.9818 - val_mean_absolute_error: 3.6030
575  epoch_end_callback epoch 6483 lr 3.125e-05
576  Epoch 6485/10000
577   - 0s - loss: 7.1186e-04 - mean_absolute_error: 0.0157 -
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577  val_loss: 31.9880 - val_mean_absolute_error: 3.6045
578  epoch_end_callback epoch 6484 lr 3.125e-05
579  Epoch 6486/10000
580   - 0s - loss: 5.8237e-04 - mean_absolute_error: 0.0143 -
     val_loss: 31.9835 - val_mean_absolute_error: 3.6031
581  epoch_end_callback epoch 6485 lr 3.125e-05
582  Epoch 6487/10000
583   - 0s - loss: 8.9885e-04 - mean_absolute_error: 0.0165 -
     val_loss: 31.9751 - val_mean_absolute_error: 3.6033
584  epoch_end_callback epoch 6486 lr 3.125e-05
585  Epoch 6488/10000
586   - 0s - loss: 6.8927e-04 - mean_absolute_error: 0.0144 -
     val_loss: 31.9518 - val_mean_absolute_error: 3.6023
587  epoch_end_callback epoch 6487 lr 3.125e-05
588  Epoch 6489/10000
589   - 0s - loss: 6.4451e-04 - mean_absolute_error: 0.0136 -
     val_loss: 31.9661 - val_mean_absolute_error: 3.6031
590  epoch_end_callback epoch 6488 lr 3.125e-05
591  Epoch 6490/10000
592   - 0s - loss: 7.0899e-04 - mean_absolute_error: 0.0148 -
     val_loss: 31.9873 - val_mean_absolute_error: 3.6022
593
594  Epoch 06490: saving model to ./model/
     model_Epoch6490_val_mean_absolute_error3.602.h5
595  epoch_end_callback epoch 6489 lr 3.125e-05
596  Epoch 6491/10000
597   - 0s - loss: 6.8692e-04 - mean_absolute_error: 0.0159 -
     val_loss: 31.9295 - val_mean_absolute_error: 3.5975
598  epoch_end_callback epoch 6490 lr 3.125e-05
599  Epoch 6492/10000
600   - 0s - loss: 7.5807e-04 - mean_absolute_error: 0.0151 -
     val_loss: 31.9988 - val_mean_absolute_error: 3.6024
601  epoch_end_callback epoch 6491 lr 3.125e-05
602  Epoch 6493/10000
603   - 0s - loss: 6.9549e-04 - mean_absolute_error: 0.0148 -
     val_loss: 31.9354 - val_mean_absolute_error: 3.5988
604  epoch_end_callback epoch 6492 lr 3.125e-05
```

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605  Epoch 6494/10000
606   - 0s - loss: 7.0812e-04 - mean_absolute_error: 0.0155 -
     val_loss: 31.9346 - val_mean_absolute_error: 3.5980
607  epoch_end_callback epoch 6493 lr 3.125e-05
608  Epoch 6495/10000
609   - 0s - loss: 7.7448e-04 - mean_absolute_error: 0.0148 -
     val_loss: 32.0279 - val_mean_absolute_error: 3.6039
610  epoch_end_callback epoch 6494 lr 3.125e-05
611  Epoch 6496/10000
612   - 0s - loss: 6.9727e-04 - mean_absolute_error: 0.0135 -
     val_loss: 31.9769 - val_mean_absolute_error: 3.6052
613  epoch_end_callback epoch 6495 lr 3.125e-05
614  Epoch 6497/10000
615   - 0s - loss: 6.5642e-04 - mean_absolute_error: 0.0132 -
     val_loss: 32.0383 - val_mean_absolute_error: 3.5989
616  epoch_end_callback epoch 6496 lr 3.125e-05
617  Epoch 6498/10000
618   - 0s - loss: 8.3165e-04 - mean_absolute_error: 0.0176 -
     val_loss: 31.9492 - val_mean_absolute_error: 3.5984
619  epoch_end_callback epoch 6497 lr 3.125e-05
620  Epoch 6499/10000
621   - 0s - loss: 5.7812e-04 - mean_absolute_error: 0.0128 -
     val_loss: 31.9744 - val_mean_absolute_error: 3.6058
622  epoch_end_callback epoch 6498 lr 3.125e-05
623  Epoch 6500/10000
624   - 0s - loss: 7.5208e-04 - mean_absolute_error: 0.0158 -
     val_loss: 31.9279 - val_mean_absolute_error: 3.5991
625
626  Epoch 06500: saving model to ./model/
     model_Epoch6500_val_mean_absolute_error3.599.h5
627  epoch_end_callback epoch 6499 lr 3.125e-05
628  Epoch 6501/10000
629   - 0s - loss: 6.5589e-04 - mean_absolute_error: 0.0138 -
     val_loss: 32.0645 - val_mean_absolute_error: 3.6052
630  epoch_end_callback epoch 6500 lr 3.125e-05
631  Epoch 6502/10000
632   - 0s - loss: 7.0423e-04 - mean_absolute_error: 0.0131 -
```

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632  val_loss: 31.9677 - val_mean_absolute_error: 3.5993
633  epoch_end_callback epoch 6501 lr 3.125e-05
634  Epoch 6503/10000
635   - 0s - loss: 6.7076e-04 - mean_absolute_error: 0.0145 -
     val_loss: 31.9926 - val_mean_absolute_error: 3.6025
636  epoch_end_callback epoch 6502 lr 3.125e-05
637  Epoch 6504/10000
638   - 0s - loss: 7.5320e-04 - mean_absolute_error: 0.0156 -
     val_loss: 32.0317 - val_mean_absolute_error: 3.6034
639  epoch_end_callback epoch 6503 lr 3.125e-05
640  Epoch 6505/10000
641   - 0s - loss: 6.1698e-04 - mean_absolute_error: 0.0143 -
     val_loss: 31.9901 - val_mean_absolute_error: 3.6029
642  epoch_end_callback epoch 6504 lr 3.125e-05
643  Epoch 6506/10000
644   - 0s - loss: 6.8659e-04 - mean_absolute_error: 0.0130 -
     val_loss: 32.0092 - val_mean_absolute_error: 3.6042
645  epoch_end_callback epoch 6505 lr 3.125e-05
646  Epoch 6507/10000
647   - 0s - loss: 8.4657e-04 - mean_absolute_error: 0.0155 -
     val_loss: 32.0137 - val_mean_absolute_error: 3.6028
648  epoch_end_callback epoch 6506 lr 3.125e-05
649  Epoch 6508/10000
650   - 0s - loss: 6.3403e-04 - mean_absolute_error: 0.0137 -
     val_loss: 31.9716 - val_mean_absolute_error: 3.5990
651  epoch_end_callback epoch 6507 lr 3.125e-05
652  Epoch 6509/10000
653   - 0s - loss: 7.2731e-04 - mean_absolute_error: 0.0150 -
     val_loss: 31.9962 - val_mean_absolute_error: 3.5998
654  epoch_end_callback epoch 6508 lr 3.125e-05
655  Epoch 6510/10000
656   - 0s - loss: 7.1534e-04 - mean_absolute_error: 0.0150 -
     val_loss: 31.9949 - val_mean_absolute_error: 3.5987
657
658  Epoch 06510: saving model to ./model/
     model_Epoch6510_val_mean_absolute_error3.599.h5
659  epoch_end_callback epoch 6509 lr 3.125e-05
```

660 Epoch 6511/10000
661 - 0s - loss: 6.9686e-04 - mean_absolute_error: 0.0146 - val_loss: 31.9861 - val_mean_absolute_error: 3.6026
662 epoch_end_callback epoch 6510 lr 3.125e-05
663 Epoch 6512/10000
664 - 0s - loss: 6.3836e-04 - mean_absolute_error: 0.0134 - val_loss: 32.0025 - val_mean_absolute_error: 3.6042
665 epoch_end_callback epoch 6511 lr 3.125e-05
666 Epoch 6513/10000
667 - 0s - loss: 7.7795e-04 - mean_absolute_error: 0.0163 - val_loss: 31.9802 - val_mean_absolute_error: 3.6017
668 epoch_end_callback epoch 6512 lr 3.125e-05
669 Epoch 6514/10000
670 - 0s - loss: 6.8686e-04 - mean_absolute_error: 0.0142 - val_loss: 31.9586 - val_mean_absolute_error: 3.6018
671 epoch_end_callback epoch 6513 lr 3.125e-05
672 Epoch 6515/10000
673 - 0s - loss: 6.0579e-04 - mean_absolute_error: 0.0130 - val_loss: 32.1000 - val_mean_absolute_error: 3.6055
674 epoch_end_callback epoch 6514 lr 3.125e-05
675 Epoch 6516/10000
676 - 0s - loss: 5.8131e-04 - mean_absolute_error: 0.0135 - val_loss: 31.9900 - val_mean_absolute_error: 3.6010
677 epoch_end_callback epoch 6515 lr 3.125e-05
678 Epoch 6517/10000
679 - 0s - loss: 7.4063e-04 - mean_absolute_error: 0.0157 - val_loss: 31.9876 - val_mean_absolute_error: 3.6013
680 epoch_end_callback epoch 6516 lr 3.125e-05
681 Epoch 6518/10000
682 - 0s - loss: 6.7804e-04 - mean_absolute_error: 0.0138 - val_loss: 31.9718 - val_mean_absolute_error: 3.6016
683 epoch_end_callback epoch 6517 lr 3.125e-05
684 Epoch 6519/10000
685 - 0s - loss: 6.7137e-04 - mean_absolute_error: 0.0141 - val_loss: 32.0263 - val_mean_absolute_error: 3.6017
686 epoch_end_callback epoch 6518 lr 3.125e-05
687 Epoch 6520/10000

688   - 0s - loss: 6.3428e-04 - mean_absolute_error: 0.0131 - val_loss: 32.0286 - val_mean_absolute_error: 3.6040

689

690 Epoch 06520: saving model to ./model/model_Epoch6520_val_mean_absolute_error3.604.h5

691 epoch_end_callback epoch 6519 lr 3.125e-05

692 Epoch 6521/10000

693   - 0s - loss: 7.3360e-04 - mean_absolute_error: 0.0163 - val_loss: 31.9765 - val_mean_absolute_error: 3.6009

694 epoch_end_callback epoch 6520 lr 3.125e-05

695 Epoch 6522/10000

696   - 0s - loss: 7.0478e-04 - mean_absolute_error: 0.0144 - val_loss: 31.9644 - val_mean_absolute_error: 3.6004

697 epoch_end_callback epoch 6521 lr 3.125e-05

698 Epoch 6523/10000

699   - 0s - loss: 6.8384e-04 - mean_absolute_error: 0.0156 - val_loss: 31.9153 - val_mean_absolute_error: 3.5992

700 epoch_end_callback epoch 6522 lr 3.125e-05

701 Epoch 6524/10000

702   - 0s - loss: 6.3419e-04 - mean_absolute_error: 0.0148 - val_loss: 31.9935 - val_mean_absolute_error: 3.6030

703 epoch_end_callback epoch 6523 lr 3.125e-05

704 Epoch 6525/10000

705   - 0s - loss: 6.8722e-04 - mean_absolute_error: 0.0144 - val_loss: 31.9248 - val_mean_absolute_error: 3.5986

706 epoch_end_callback epoch 6524 lr 3.125e-05

707 Epoch 6526/10000

708   - 0s - loss: 7.3608e-04 - mean_absolute_error: 0.0158 - val_loss: 32.0689 - val_mean_absolute_error: 3.6046

709 epoch_end_callback epoch 6525 lr 3.125e-05

710 Epoch 6527/10000

711   - 0s - loss: 6.7095e-04 - mean_absolute_error: 0.0140 - val_loss: 31.9372 - val_mean_absolute_error: 3.5995

712 epoch_end_callback epoch 6526 lr 3.125e-05

713 Epoch 6528/10000

714   - 0s - loss: 7.3937e-04 - mean_absolute_error: 0.0151 - val_loss: 31.9862 - val_mean_absolute_error: 3.6036

715 epoch_end_callback epoch 6527 lr 3.125e-05
716 Epoch 6529/10000
717   - 0s - loss: 7.6873e-04 - mean_absolute_error: 0.0160 - val_loss: 31.9340 - val_mean_absolute_error: 3.5997
718 epoch_end_callback epoch 6528 lr 3.125e-05
719 Epoch 6530/10000
720   - 0s - loss: 7.3336e-04 - mean_absolute_error: 0.0135 - val_loss: 32.0245 - val_mean_absolute_error: 3.5962
721
722 Epoch 06530: saving model to ./model/model_Epoch6530_val_mean_absolute_error3.596.h5
723 epoch_end_callback epoch 6529 lr 3.125e-05
724 Epoch 6531/10000
725   - 0s - loss: 5.3277e-04 - mean_absolute_error: 0.0134 - val_loss: 32.0300 - val_mean_absolute_error: 3.6044
726 epoch_end_callback epoch 6530 lr 3.125e-05
727 Epoch 6532/10000
728   - 0s - loss: 8.0357e-04 - mean_absolute_error: 0.0159 - val_loss: 31.9954 - val_mean_absolute_error: 3.6048
729 epoch_end_callback epoch 6531 lr 3.125e-05
730 Epoch 6533/10000
731   - 0s - loss: 6.9209e-04 - mean_absolute_error: 0.0146 - val_loss: 31.9738 - val_mean_absolute_error: 3.6015
732 epoch_end_callback epoch 6532 lr 3.125e-05
733 Epoch 6534/10000
734   - 0s - loss: 7.1362e-04 - mean_absolute_error: 0.0154 - val_loss: 31.9345 - val_mean_absolute_error: 3.5986
735 epoch_end_callback epoch 6533 lr 3.125e-05
736 Epoch 6535/10000
737   - 0s - loss: 5.3653e-04 - mean_absolute_error: 0.0135 - val_loss: 32.0045 - val_mean_absolute_error: 3.5999
738 epoch_end_callback epoch 6534 lr 3.125e-05
739 Epoch 6536/10000
740   - 0s - loss: 8.8343e-04 - mean_absolute_error: 0.0157 - val_loss: 31.9884 - val_mean_absolute_error: 3.6027
741 epoch_end_callback epoch 6535 lr 3.125e-05
742 Epoch 6537/10000

```
743    - 0s - loss: 7.2949e-04 - mean_absolute_error: 0.0138 -
       val_loss: 31.9784 - val_mean_absolute_error: 3.6007
744  epoch_end_callback epoch 6536 lr 3.125e-05
745  Epoch 6538/10000
746    - 0s - loss: 6.9189e-04 - mean_absolute_error: 0.0148 -
       val_loss: 32.0476 - val_mean_absolute_error: 3.6047
747  epoch_end_callback epoch 6537 lr 3.125e-05
748  Epoch 6539/10000
749    - 0s - loss: 7.2830e-04 - mean_absolute_error: 0.0138 -
       val_loss: 31.9872 - val_mean_absolute_error: 3.5988
750  epoch_end_callback epoch 6538 lr 3.125e-05
751  Epoch 6540/10000
752    - 0s - loss: 6.1949e-04 - mean_absolute_error: 0.0138 -
       val_loss: 31.9606 - val_mean_absolute_error: 3.6002
753
754  Epoch 06540: saving model to ./model/
       model_Epoch6540_val_mean_absolute_error3.600.h5
755  epoch_end_callback epoch 6539 lr 3.125e-05
756  Epoch 6541/10000
757    - 0s - loss: 7.0122e-04 - mean_absolute_error: 0.0149 -
       val_loss: 31.9988 - val_mean_absolute_error: 3.6031
758  epoch_end_callback epoch 6540 lr 3.125e-05
759  Epoch 6542/10000
760    - 0s - loss: 6.7561e-04 - mean_absolute_error: 0.0156 -
       val_loss: 31.9632 - val_mean_absolute_error: 3.6015
761  epoch_end_callback epoch 6541 lr 3.125e-05
762  Epoch 6543/10000
763    - 0s - loss: 7.4977e-04 - mean_absolute_error: 0.0134 -
       val_loss: 32.0084 - val_mean_absolute_error: 3.6007
764  epoch_end_callback epoch 6542 lr 3.125e-05
765  Epoch 6544/10000
766    - 0s - loss: 6.9953e-04 - mean_absolute_error: 0.0165 -
       val_loss: 31.9644 - val_mean_absolute_error: 3.5994
767  epoch_end_callback epoch 6543 lr 3.125e-05
768  Epoch 6545/10000
769    - 0s - loss: 6.6124e-04 - mean_absolute_error: 0.0137 -
       val_loss: 31.9557 - val_mean_absolute_error: 3.6024
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770  epoch_end_callback epoch 6544 lr 3.125e-05
771  Epoch 6546/10000
772   - 0s - loss: 6.8414e-04 - mean_absolute_error: 0.0147 -
     val_loss: 32.0120 - val_mean_absolute_error: 3.6054
773  epoch_end_callback epoch 6545 lr 3.125e-05
774  Epoch 6547/10000
775   - 0s - loss: 7.0684e-04 - mean_absolute_error: 0.0139 -
     val_loss: 32.0025 - val_mean_absolute_error: 3.6028
776  epoch_end_callback epoch 6546 lr 3.125e-05
777  Epoch 6548/10000
778   - 0s - loss: 6.9509e-04 - mean_absolute_error: 0.0136 -
     val_loss: 31.9874 - val_mean_absolute_error: 3.6038
779  epoch_end_callback epoch 6547 lr 3.125e-05
780  Epoch 6549/10000
781   - 0s - loss: 6.8166e-04 - mean_absolute_error: 0.0145 -
     val_loss: 31.9920 - val_mean_absolute_error: 3.6040
782  epoch_end_callback epoch 6548 lr 3.125e-05
783  Epoch 6550/10000
784   - 0s - loss: 5.8080e-04 - mean_absolute_error: 0.0138 -
     val_loss: 31.9694 - val_mean_absolute_error: 3.6043
785
786  Epoch 06550: saving model to ./model/
     model_Epoch6550_val_mean_absolute_error3.604.h5
787  epoch_end_callback epoch 6549 lr 3.125e-05
788  Epoch 6551/10000
789   - 0s - loss: 6.4571e-04 - mean_absolute_error: 0.0144 -
     val_loss: 32.0154 - val_mean_absolute_error: 3.6019
790  epoch_end_callback epoch 6550 lr 3.125e-05
791  Epoch 6552/10000
792   - 0s - loss: 6.8447e-04 - mean_absolute_error: 0.0146 -
     val_loss: 31.9684 - val_mean_absolute_error: 3.6026
793  epoch_end_callback epoch 6551 lr 3.125e-05
794  Epoch 6553/10000
795   - 0s - loss: 6.6693e-04 - mean_absolute_error: 0.0141 -
     val_loss: 31.9709 - val_mean_absolute_error: 3.6039
796  epoch_end_callback epoch 6552 lr 3.125e-05
797  Epoch 6554/10000
```

```
798    - 0s - loss: 5.9898e-04 - mean_absolute_error: 0.0139 -
       val_loss: 31.9613 - val_mean_absolute_error: 3.6003
799  epoch_end_callback epoch 6553 lr 3.125e-05
800  Epoch 6555/10000
801    - 0s - loss: 6.5609e-04 - mean_absolute_error: 0.0157 -
       val_loss: 32.0658 - val_mean_absolute_error: 3.6065
802  epoch_end_callback epoch 6554 lr 3.125e-05
803  Epoch 6556/10000
804    - 0s - loss: 7.7523e-04 - mean_absolute_error: 0.0167 -
       val_loss: 31.9801 - val_mean_absolute_error: 3.6008
805  epoch_end_callback epoch 6555 lr 3.125e-05
806  Epoch 6557/10000
807    - 0s - loss: 6.0872e-04 - mean_absolute_error: 0.0133 -
       val_loss: 31.9828 - val_mean_absolute_error: 3.6027
808  epoch_end_callback epoch 6556 lr 3.125e-05
809  Epoch 6558/10000
810    - 0s - loss: 7.0495e-04 - mean_absolute_error: 0.0152 -
       val_loss: 32.0613 - val_mean_absolute_error: 3.6051
811  epoch_end_callback epoch 6557 lr 3.125e-05
812  Epoch 6559/10000
813    - 0s - loss: 7.9101e-04 - mean_absolute_error: 0.0159 -
       val_loss: 32.0045 - val_mean_absolute_error: 3.6045
814  epoch_end_callback epoch 6558 lr 3.125e-05
815  Epoch 6560/10000
816    - 0s - loss: 6.9070e-04 - mean_absolute_error: 0.0153 -
       val_loss: 32.0034 - val_mean_absolute_error: 3.6048
817
818  Epoch 06560: saving model to ./model/
       model_Epoch6560_val_mean_absolute_error3.605.h5
819  epoch_end_callback epoch 6559 lr 3.125e-05
820  Epoch 6561/10000
821    - 0s - loss: 7.1919e-04 - mean_absolute_error: 0.0145 -
       val_loss: 32.0604 - val_mean_absolute_error: 3.6050
822  epoch_end_callback epoch 6560 lr 3.125e-05
823  Epoch 6562/10000
824    - 0s - loss: 6.9442e-04 - mean_absolute_error: 0.0146 -
       val_loss: 31.9798 - val_mean_absolute_error: 3.5990
```

825 epoch_end_callback epoch 6561 lr 3.125e-05
826 Epoch 6563/10000
827 - 0s - loss: 6.2740e-04 - mean_absolute_error: 0.0151 - val_loss: 31.9273 - val_mean_absolute_error: 3.5986
828 epoch_end_callback epoch 6562 lr 3.125e-05
829 Epoch 6564/10000
830 - 0s - loss: 6.4097e-04 - mean_absolute_error: 0.0139 - val_loss: 31.9701 - val_mean_absolute_error: 3.6024
831 epoch_end_callback epoch 6563 lr 3.125e-05
832 Epoch 6565/10000
833 - 0s - loss: 6.9716e-04 - mean_absolute_error: 0.0146 - val_loss: 31.9732 - val_mean_absolute_error: 3.6006
834 epoch_end_callback epoch 6564 lr 3.125e-05
835 Epoch 6566/10000
836 - 0s - loss: 7.7467e-04 - mean_absolute_error: 0.0130 - val_loss: 31.9652 - val_mean_absolute_error: 3.6012
837 epoch_end_callback epoch 6565 lr 3.125e-05
838 Epoch 6567/10000
839 - 0s - loss: 7.7916e-04 - mean_absolute_error: 0.0160 - val_loss: 31.9760 - val_mean_absolute_error: 3.6029
840 epoch_end_callback epoch 6566 lr 3.125e-05
841 Epoch 6568/10000
842 - 0s - loss: 6.4643e-04 - mean_absolute_error: 0.0138 - val_loss: 32.0069 - val_mean_absolute_error: 3.6027
843 epoch_end_callback epoch 6567 lr 3.125e-05
844 Epoch 6569/10000
845 - 0s - loss: 6.7912e-04 - mean_absolute_error: 0.0148 - val_loss: 32.0091 - val_mean_absolute_error: 3.6022
846 epoch_end_callback epoch 6568 lr 3.125e-05
847 Epoch 6570/10000
848 - 0s - loss: 7.2416e-04 - mean_absolute_error: 0.0146 - val_loss: 32.0250 - val_mean_absolute_error: 3.6028
849
850 Epoch 06570: saving model to ./model/model_Epoch6570_val_mean_absolute_error3.603.h5
851 epoch_end_callback epoch 6569 lr 3.125e-05
852 Epoch 6571/10000

853 - 0s - loss: 5.7173e-04 - mean_absolute_error: 0.0127 - val_loss: 32.0033 - val_mean_absolute_error: 3.6017

854 epoch_end_callback epoch 6570 lr 3.125e-05

855 Epoch 6572/10000

856 - 0s - loss: 8.4571e-04 - mean_absolute_error: 0.0169 - val_loss: 32.0040 - val_mean_absolute_error: 3.5988

857 epoch_end_callback epoch 6571 lr 3.125e-05

858 Epoch 6573/10000

859 - 0s - loss: 5.9173e-04 - mean_absolute_error: 0.0130 - val_loss: 32.0222 - val_mean_absolute_error: 3.6062

860 epoch_end_callback epoch 6572 lr 3.125e-05

861 Epoch 6574/10000

862 - 0s - loss: 5.6313e-04 - mean_absolute_error: 0.0145 - val_loss: 32.0164 - val_mean_absolute_error: 3.6060

863 epoch_end_callback epoch 6573 lr 3.125e-05

864 Epoch 6575/10000

865 - 0s - loss: 7.0162e-04 - mean_absolute_error: 0.0145 - val_loss: 31.9423 - val_mean_absolute_error: 3.6009

866 epoch_end_callback epoch 6574 lr 3.125e-05

867 Epoch 6576/10000

868 - 0s - loss: 8.0139e-04 - mean_absolute_error: 0.0149 - val_loss: 32.0147 - val_mean_absolute_error: 3.6009

869 epoch_end_callback epoch 6575 lr 3.125e-05

870 Epoch 6577/10000

871 - 0s - loss: 6.1719e-04 - mean_absolute_error: 0.0120 - val_loss: 31.9524 - val_mean_absolute_error: 3.6034

872 epoch_end_callback epoch 6576 lr 3.125e-05

873 Epoch 6578/10000

874 - 0s - loss: 7.1132e-04 - mean_absolute_error: 0.0161 - val_loss: 32.0237 - val_mean_absolute_error: 3.6013

875 epoch_end_callback epoch 6577 lr 3.125e-05

876 Epoch 6579/10000

877 - 0s - loss: 7.5012e-04 - mean_absolute_error: 0.0159 - val_loss: 32.0045 - val_mean_absolute_error: 3.6015

878 epoch_end_callback epoch 6578 lr 3.125e-05

879 Epoch 6580/10000

880 - 0s - loss: 6.4417e-04 - mean_absolute_error: 0.0137 -

```
880  val_loss: 31.9922 - val_mean_absolute_error: 3.6036
881
882  Epoch 06580: saving model to ./model/
     model_Epoch6580_val_mean_absolute_error3.604.h5
883  epoch_end_callback epoch 6579 lr 3.125e-05
884  Epoch 6581/10000
885   - 0s - loss: 7.3962e-04 - mean_absolute_error: 0.0154 -
     val_loss: 31.9947 - val_mean_absolute_error: 3.6019
886  epoch_end_callback epoch 6580 lr 3.125e-05
887  Epoch 6582/10000
888   - 0s - loss: 7.0590e-04 - mean_absolute_error: 0.0149 -
     val_loss: 31.8925 - val_mean_absolute_error: 3.6003
889  epoch_end_callback epoch 6581 lr 3.125e-05
890  Epoch 6583/10000
891   - 0s - loss: 7.2708e-04 - mean_absolute_error: 0.0154 -
     val_loss: 31.9871 - val_mean_absolute_error: 3.6024
892  epoch_end_callback epoch 6582 lr 3.125e-05
893  Epoch 6584/10000
894   - 0s - loss: 5.4795e-04 - mean_absolute_error: 0.0110 -
     val_loss: 31.9583 - val_mean_absolute_error: 3.5990
895  epoch_end_callback epoch 6583 lr 3.125e-05
896  Epoch 6585/10000
897   - 0s - loss: 7.7702e-04 - mean_absolute_error: 0.0174 -
     val_loss: 31.9944 - val_mean_absolute_error: 3.6015
898  epoch_end_callback epoch 6584 lr 3.125e-05
899  Epoch 6586/10000
900   - 0s - loss: 6.5101e-04 - mean_absolute_error: 0.0134 -
     val_loss: 32.0137 - val_mean_absolute_error: 3.6015
901  epoch_end_callback epoch 6585 lr 3.125e-05
902  Epoch 6587/10000
903   - 0s - loss: 7.6542e-04 - mean_absolute_error: 0.0148 -
     val_loss: 32.0318 - val_mean_absolute_error: 3.6043
904  epoch_end_callback epoch 6586 lr 3.125e-05
905  Epoch 6588/10000
906   - 0s - loss: 6.1055e-04 - mean_absolute_error: 0.0142 -
     val_loss: 31.9062 - val_mean_absolute_error: 3.5988
907  epoch_end_callback epoch 6587 lr 3.125e-05
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908  Epoch 6589/10000
909   - 0s - loss: 6.0936e-04 - mean_absolute_error: 0.0133 -
      val_loss: 32.0143 - val_mean_absolute_error: 3.6041
910  epoch_end_callback epoch 6588 lr 3.125e-05
911  Epoch 6590/10000
912   - 0s - loss: 8.0484e-04 - mean_absolute_error: 0.0169 -
      val_loss: 31.9471 - val_mean_absolute_error: 3.6028
913
914  Epoch 06590: saving model to ./model/
      model_Epoch6590_val_mean_absolute_error3.603.h5
915  epoch_end_callback epoch 6589 lr 3.125e-05
916  Epoch 6591/10000
917   - 0s - loss: 6.0901e-04 - mean_absolute_error: 0.0132 -
      val_loss: 31.9825 - val_mean_absolute_error: 3.6003
918  epoch_end_callback epoch 6590 lr 3.125e-05
919  Epoch 6592/10000
920   - 0s - loss: 7.2853e-04 - mean_absolute_error: 0.0163 -
      val_loss: 31.9091 - val_mean_absolute_error: 3.5980
921  epoch_end_callback epoch 6591 lr 3.125e-05
922  Epoch 6593/10000
923   - 0s - loss: 6.6491e-04 - mean_absolute_error: 0.0142 -
      val_loss: 31.9836 - val_mean_absolute_error: 3.6066
924  epoch_end_callback epoch 6592 lr 3.125e-05
925  Epoch 6594/10000
926   - 0s - loss: 7.1922e-04 - mean_absolute_error: 0.0149 -
      val_loss: 31.9506 - val_mean_absolute_error: 3.6011
927  epoch_end_callback epoch 6593 lr 3.125e-05
928  Epoch 6595/10000
929   - 0s - loss: 6.7608e-04 - mean_absolute_error: 0.0149 -
      val_loss: 31.9491 - val_mean_absolute_error: 3.6036
930  epoch_end_callback epoch 6594 lr 3.125e-05
931  Epoch 6596/10000
932   - 0s - loss: 6.6109e-04 - mean_absolute_error: 0.0147 -
      val_loss: 31.9679 - val_mean_absolute_error: 3.6000
933  epoch_end_callback epoch 6595 lr 3.125e-05
934  Epoch 6597/10000
935   - 0s - loss: 6.9404e-04 - mean_absolute_error: 0.0145 -
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935  val_loss: 31.9988 - val_mean_absolute_error: 3.6051
936  epoch_end_callback epoch 6596 lr 3.125e-05
937  Epoch 6598/10000
938   - 0s - loss: 7.8505e-04 - mean_absolute_error: 0.0169 -
     val_loss: 31.9527 - val_mean_absolute_error: 3.6056
939  epoch_end_callback epoch 6597 lr 3.125e-05
940  Epoch 6599/10000
941   - 0s - loss: 6.4259e-04 - mean_absolute_error: 0.0147 -
     val_loss: 31.9661 - val_mean_absolute_error: 3.6021
942  epoch_end_callback epoch 6598 lr 3.125e-05
943  Epoch 6600/10000
944   - 0s - loss: 6.5402e-04 - mean_absolute_error: 0.0150 -
     val_loss: 31.9502 - val_mean_absolute_error: 3.6019
945
946  Epoch 06600: saving model to ./model/
     model_Epoch6600_val_mean_absolute_error3.602.h5
947  epoch_end_callback epoch 6599 lr 3.125e-05
948  Epoch 6601/10000
949   - 0s - loss: 6.5597e-04 - mean_absolute_error: 0.0137 -
     val_loss: 31.9527 - val_mean_absolute_error: 3.6014
950  epoch_end_callback epoch 6600 lr 3.125e-05
951  Epoch 6602/10000
952   - 0s - loss: 7.2900e-04 - mean_absolute_error: 0.0161 -
     val_loss: 31.9931 - val_mean_absolute_error: 3.6040
953  epoch_end_callback epoch 6601 lr 3.125e-05
954  Epoch 6603/10000
955   - 0s - loss: 7.0634e-04 - mean_absolute_error: 0.0142 -
     val_loss: 31.9940 - val_mean_absolute_error: 3.6001
956  epoch_end_callback epoch 6602 lr 3.125e-05
957  Epoch 6604/10000
958   - 0s - loss: 8.4671e-04 - mean_absolute_error: 0.0155 -
     val_loss: 32.0196 - val_mean_absolute_error: 3.6032
959  epoch_end_callback epoch 6603 lr 3.125e-05
960  Epoch 6605/10000
961   - 0s - loss: 5.8340e-04 - mean_absolute_error: 0.0133 -
     val_loss: 31.9792 - val_mean_absolute_error: 3.6019
962  epoch_end_callback epoch 6604 lr 3.125e-05
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963 Epoch 6606/10000
964  - 0s - loss: 5.6163e-04 - mean_absolute_error: 0.0142 -
     val_loss: 32.0249 - val_mean_absolute_error: 3.6017
965 epoch_end_callback epoch 6605 lr 3.125e-05
966 Epoch 6607/10000
967  - 0s - loss: 7.1356e-04 - mean_absolute_error: 0.0162 -
     val_loss: 31.9898 - val_mean_absolute_error: 3.6008
968 epoch_end_callback epoch 6606 lr 3.125e-05
969 Epoch 6608/10000
970  - 0s - loss: 6.3868e-04 - mean_absolute_error: 0.0136 -
     val_loss: 31.9950 - val_mean_absolute_error: 3.6027
971 epoch_end_callback epoch 6607 lr 3.125e-05
972 Epoch 6609/10000
973  - 0s - loss: 6.7561e-04 - mean_absolute_error: 0.0141 -
     val_loss: 32.0354 - val_mean_absolute_error: 3.6040
974 epoch_end_callback epoch 6608 lr 3.125e-05
975 Epoch 6610/10000
976  - 0s - loss: 6.6820e-04 - mean_absolute_error: 0.0146 -
     val_loss: 31.9612 - val_mean_absolute_error: 3.6002
977
978 Epoch 06610: saving model to ./model/
     model_Epoch6610_val_mean_absolute_error3.600.h5
979 epoch_end_callback epoch 6609 lr 3.125e-05
980 Epoch 6611/10000
981  - 0s - loss: 6.6082e-04 - mean_absolute_error: 0.0140 -
     val_loss: 31.9712 - val_mean_absolute_error: 3.6012
982 epoch_end_callback epoch 6610 lr 3.125e-05
983 Epoch 6612/10000
984  - 0s - loss: 7.7645e-04 - mean_absolute_error: 0.0161 -
     val_loss: 32.0021 - val_mean_absolute_error: 3.6033
985 epoch_end_callback epoch 6611 lr 3.125e-05
986 Epoch 6613/10000
987  - 0s - loss: 5.6877e-04 - mean_absolute_error: 0.0125 -
     val_loss: 31.9946 - val_mean_absolute_error: 3.6029
988 epoch_end_callback epoch 6612 lr 3.125e-05
989 Epoch 6614/10000
990  - 0s - loss: 6.3177e-04 - mean_absolute_error: 0.0158 -
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 990  val_loss: 31.9774 - val_mean_absolute_error: 3.6022
 991  epoch_end_callback epoch 6613 lr 3.125e-05
 992  Epoch 6615/10000
 993   - 0s - loss: 7.0479e-04 - mean_absolute_error: 0.0147 -
      val_loss: 31.9910 - val_mean_absolute_error: 3.6003
 994  epoch_end_callback epoch 6614 lr 3.125e-05
 995  Epoch 6616/10000
 996   - 0s - loss: 6.8972e-04 - mean_absolute_error: 0.0143 -
      val_loss: 31.9697 - val_mean_absolute_error: 3.6017
 997  epoch_end_callback epoch 6615 lr 3.125e-05
 998  Epoch 6617/10000
 999   - 0s - loss: 6.7481e-04 - mean_absolute_error: 0.0146 -
      val_loss: 32.0136 - val_mean_absolute_error: 3.6029
1000  epoch_end_callback epoch 6616 lr 3.125e-05
1001  Epoch 6618/10000
1002   - 0s - loss: 6.9699e-04 - mean_absolute_error: 0.0146 -
      val_loss: 31.9705 - val_mean_absolute_error: 3.6055
1003  epoch_end_callback epoch 6617 lr 3.125e-05
1004  Epoch 6619/10000
1005   - 0s - loss: 6.9319e-04 - mean_absolute_error: 0.0141 -
      val_loss: 31.9518 - val_mean_absolute_error: 3.6048
1006  epoch_end_callback epoch 6618 lr 3.125e-05
1007  Epoch 6620/10000
1008   - 0s - loss: 7.1984e-04 - mean_absolute_error: 0.0160 -
      val_loss: 31.9757 - val_mean_absolute_error: 3.6060
1009
1010  Epoch 06620: saving model to ./model/
      model_Epoch6620_val_mean_absolute_error3.606.h5
1011  epoch_end_callback epoch 6619 lr 3.125e-05
1012  Epoch 6621/10000
1013   - 0s - loss: 6.2785e-04 - mean_absolute_error: 0.0135 -
      val_loss: 32.0472 - val_mean_absolute_error: 3.6079
1014  epoch_end_callback epoch 6620 lr 3.125e-05
1015  Epoch 6622/10000
1016   - 0s - loss: 7.9057e-04 - mean_absolute_error: 0.0146 -
      val_loss: 32.0103 - val_mean_absolute_error: 3.6039
1017  epoch_end_callback epoch 6621 lr 3.125e-05
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1018  Epoch 6623/10000
1019   - 0s - loss: 6.6688e-04 - mean_absolute_error: 0.0151 -
      val_loss: 32.0176 - val_mean_absolute_error: 3.6019
1020  epoch_end_callback epoch 6622 lr 3.125e-05
1021  Epoch 6624/10000
1022   - 0s - loss: 6.1194e-04 - mean_absolute_error: 0.0124 -
      val_loss: 32.0256 - val_mean_absolute_error: 3.6030
1023  epoch_end_callback epoch 6623 lr 3.125e-05
1024  Epoch 6625/10000
1025   - 0s - loss: 7.8003e-04 - mean_absolute_error: 0.0171 -
      val_loss: 32.0519 - val_mean_absolute_error: 3.6044
1026  epoch_end_callback epoch 6624 lr 3.125e-05
1027  Epoch 6626/10000
1028   - 0s - loss: 6.3612e-04 - mean_absolute_error: 0.0133 -
      val_loss: 32.0462 - val_mean_absolute_error: 3.6053
1029  epoch_end_callback epoch 6625 lr 3.125e-05
1030  Epoch 6627/10000
1031   - 0s - loss: 6.4928e-04 - mean_absolute_error: 0.0150 -
      val_loss: 32.0033 - val_mean_absolute_error: 3.6038
1032  epoch_end_callback epoch 6626 lr 3.125e-05
1033  Epoch 6628/10000
1034   - 0s - loss: 6.4675e-04 - mean_absolute_error: 0.0148 -
      val_loss: 32.0317 - val_mean_absolute_error: 3.6055
1035  epoch_end_callback epoch 6627 lr 3.125e-05
1036  Epoch 6629/10000
1037   - 0s - loss: 6.5149e-04 - mean_absolute_error: 0.0153 -
      val_loss: 32.0086 - val_mean_absolute_error: 3.6052
1038  epoch_end_callback epoch 6628 lr 3.125e-05
1039  Epoch 6630/10000
1040   - 0s - loss: 7.3645e-04 - mean_absolute_error: 0.0156 -
      val_loss: 32.0356 - val_mean_absolute_error: 3.6052
1041
1042  Epoch 06630: saving model to ./model/
      model_Epoch6630_val_mean_absolute_error3.605.h5
1043  epoch_end_callback epoch 6629 lr 3.125e-05
1044  Epoch 6631/10000
1045   - 0s - loss: 7.3803e-04 - mean_absolute_error: 0.0148 -
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1045  val_loss: 31.9864 - val_mean_absolute_error: 3.6027
1046  epoch_end_callback epoch 6630 lr 3.125e-05
1047  Epoch 6632/10000
1048   - 0s - loss: 6.2905e-04 - mean_absolute_error: 0.0141 -
      val_loss: 32.0055 - val_mean_absolute_error: 3.6012
1049  epoch_end_callback epoch 6631 lr 3.125e-05
1050  Epoch 6633/10000
1051   - 0s - loss: 7.5432e-04 - mean_absolute_error: 0.0160 -
      val_loss: 32.0123 - val_mean_absolute_error: 3.6051
1052  epoch_end_callback epoch 6632 lr 3.125e-05
1053  Epoch 6634/10000
1054   - 0s - loss: 7.5665e-04 - mean_absolute_error: 0.0143 -
      val_loss: 32.0144 - val_mean_absolute_error: 3.6077
1055  epoch_end_callback epoch 6633 lr 3.125e-05
1056  Epoch 6635/10000
1057   - 0s - loss: 7.1021e-04 - mean_absolute_error: 0.0150 -
      val_loss: 32.0046 - val_mean_absolute_error: 3.6039
1058  epoch_end_callback epoch 6634 lr 3.125e-05
1059  Epoch 6636/10000
1060   - 0s - loss: 6.1210e-04 - mean_absolute_error: 0.0136 -
      val_loss: 31.9686 - val_mean_absolute_error: 3.5999
1061  epoch_end_callback epoch 6635 lr 3.125e-05
1062  Epoch 6637/10000
1063   - 0s - loss: 7.0848e-04 - mean_absolute_error: 0.0155 -
      val_loss: 32.0225 - val_mean_absolute_error: 3.6076
1064  epoch_end_callback epoch 6636 lr 3.125e-05
1065  Epoch 6638/10000
1066   - 0s - loss: 5.4499e-04 - mean_absolute_error: 0.0127 -
      val_loss: 32.0400 - val_mean_absolute_error: 3.6088
1067  epoch_end_callback epoch 6637 lr 3.125e-05
1068  Epoch 6639/10000
1069   - 0s - loss: 8.2422e-04 - mean_absolute_error: 0.0162 -
      val_loss: 32.0337 - val_mean_absolute_error: 3.6054
1070  epoch_end_callback epoch 6638 lr 3.125e-05
1071  Epoch 6640/10000
1072   - 0s - loss: 6.4640e-04 - mean_absolute_error: 0.0152 -
      val_loss: 31.9947 - val_mean_absolute_error: 3.6031
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1073

1074 Epoch 06640: saving model to ./model/
model_Epoch6640_val_mean_absolute_error3.603.h5

1075 epoch_end_callback epoch 6639 lr 3.125e-05

1076 Epoch 6641/10000

1077 - 0s - loss: 6.5111e-04 - mean_absolute_error: 0.0147 -
val_loss: 32.0210 - val_mean_absolute_error: 3.6053

1078 epoch_end_callback epoch 6640 lr 3.125e-05

1079 Epoch 6642/10000

1080 - 0s - loss: 6.7745e-04 - mean_absolute_error: 0.0131 -
val_loss: 31.9638 - val_mean_absolute_error: 3.6023

1081 epoch_end_callback epoch 6641 lr 3.125e-05

1082 Epoch 6643/10000

1083 - 0s - loss: 7.2134e-04 - mean_absolute_error: 0.0147 -
val_loss: 31.9796 - val_mean_absolute_error: 3.6033

1084 epoch_end_callback epoch 6642 lr 3.125e-05

1085 Epoch 6644/10000

1086 - 0s - loss: 6.1579e-04 - mean_absolute_error: 0.0144 -
val_loss: 32.0499 - val_mean_absolute_error: 3.6067

1087 epoch_end_callback epoch 6643 lr 3.125e-05

1088 Epoch 6645/10000

1089 - 0s - loss: 8.4574e-04 - mean_absolute_error: 0.0171 -
val_loss: 32.0078 - val_mean_absolute_error: 3.6066

1090 epoch_end_callback epoch 6644 lr 3.125e-05

1091 Epoch 6646/10000

1092 - 0s - loss: 6.0317e-04 - mean_absolute_error: 0.0130 -
val_loss: 31.9477 - val_mean_absolute_error: 3.6021

1093 epoch_end_callback epoch 6645 lr 3.125e-05

1094 Epoch 6647/10000

1095 - 0s - loss: 6.6550e-04 - mean_absolute_error: 0.0144 -
val_loss: 31.9762 - val_mean_absolute_error: 3.6017

1096 epoch_end_callback epoch 6646 lr 3.125e-05

1097 Epoch 6648/10000

1098 - 0s - loss: 6.6059e-04 - mean_absolute_error: 0.0157 -
val_loss: 31.9761 - val_mean_absolute_error: 3.6034

1099 epoch_end_callback epoch 6647 lr 3.125e-05

1100 Epoch 6649/10000

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1101    - 0s - loss: 6.0361e-04 - mean_absolute_error: 0.0137 -
        val_loss: 31.9394 - val_mean_absolute_error: 3.6003
1102 epoch_end_callback epoch 6648 lr 3.125e-05
1103 Epoch 6650/10000
1104    - 0s - loss: 6.1185e-04 - mean_absolute_error: 0.0153 -
        val_loss: 31.9628 - val_mean_absolute_error: 3.6006
1105
1106 Epoch 06650: saving model to ./model/
        model_Epoch6650_val_mean_absolute_error3.601.h5
1107 epoch_end_callback epoch 6649 lr 3.125e-05
1108 Epoch 6651/10000
1109    - 0s - loss: 5.9507e-04 - mean_absolute_error: 0.0143 -
        val_loss: 32.0180 - val_mean_absolute_error: 3.6042
1110 epoch_end_callback epoch 6650 lr 3.125e-05
1111 Epoch 6652/10000
1112    - 0s - loss: 6.1685e-04 - mean_absolute_error: 0.0146 -
        val_loss: 31.9553 - val_mean_absolute_error: 3.6011
1113 epoch_end_callback epoch 6651 lr 3.125e-05
1114 Epoch 6653/10000
1115    - 0s - loss: 5.4821e-04 - mean_absolute_error: 0.0135 -
        val_loss: 31.9606 - val_mean_absolute_error: 3.6038
1116 epoch_end_callback epoch 6652 lr 3.125e-05
1117 Epoch 6654/10000
1118    - 0s - loss: 7.2966e-04 - mean_absolute_error: 0.0164 -
        val_loss: 32.0010 - val_mean_absolute_error: 3.6026
1119 epoch_end_callback epoch 6653 lr 3.125e-05
1120 Epoch 6655/10000
1121    - 0s - loss: 7.2684e-04 - mean_absolute_error: 0.0156 -
        val_loss: 32.0155 - val_mean_absolute_error: 3.6038
1122 epoch_end_callback epoch 6654 lr 3.125e-05
1123 Epoch 6656/10000
1124    - 0s - loss: 5.6704e-04 - mean_absolute_error: 0.0123 -
        val_loss: 31.9769 - val_mean_absolute_error: 3.6009
1125 epoch_end_callback epoch 6655 lr 3.125e-05
1126 Epoch 6657/10000
1127    - 0s - loss: 6.7178e-04 - mean_absolute_error: 0.0147 -
        val_loss: 32.0180 - val_mean_absolute_error: 3.6029
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1128 epoch_end_callback epoch 6656 lr 3.125e-05
1129 Epoch 6658/10000
1130  - 0s - loss: 5.1621e-04 - mean_absolute_error: 0.0135 -
     val_loss: 32.0845 - val_mean_absolute_error: 3.6099
1131 epoch_end_callback epoch 6657 lr 3.125e-05
1132 Epoch 6659/10000
1133  - 0s - loss: 6.4391e-04 - mean_absolute_error: 0.0147 -
     val_loss: 32.0794 - val_mean_absolute_error: 3.6057
1134 epoch_end_callback epoch 6658 lr 3.125e-05
1135 Epoch 6660/10000
1136  - 0s - loss: 7.1847e-04 - mean_absolute_error: 0.0143 -
     val_loss: 31.9639 - val_mean_absolute_error: 3.6017
1137
1138 Epoch 06660: saving model to ./model/
     model_Epoch6660_val_mean_absolute_error3.602.h5
1139 epoch_end_callback epoch 6659 lr 3.125e-05
1140 Epoch 6661/10000
1141  - 0s - loss: 6.2794e-04 - mean_absolute_error: 0.0138 -
     val_loss: 32.0153 - val_mean_absolute_error: 3.6037
1142 epoch_end_callback epoch 6660 lr 3.125e-05
1143 Epoch 6662/10000
1144  - 0s - loss: 7.2962e-04 - mean_absolute_error: 0.0155 -
     val_loss: 31.9766 - val_mean_absolute_error: 3.6036
1145 epoch_end_callback epoch 6661 lr 3.125e-05
1146 Epoch 6663/10000
1147  - 0s - loss: 7.0303e-04 - mean_absolute_error: 0.0145 -
     val_loss: 32.0445 - val_mean_absolute_error: 3.6057
1148 epoch_end_callback epoch 6662 lr 3.125e-05
1149 Epoch 6664/10000
1150  - 0s - loss: 6.4653e-04 - mean_absolute_error: 0.0146 -
     val_loss: 32.0036 - val_mean_absolute_error: 3.6035
1151 epoch_end_callback epoch 6663 lr 3.125e-05
1152 Epoch 6665/10000
1153  - 0s - loss: 7.1310e-04 - mean_absolute_error: 0.0144 -
     val_loss: 32.0156 - val_mean_absolute_error: 3.6038
1154 epoch_end_callback epoch 6664 lr 3.125e-05
1155 Epoch 6666/10000
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1156    - 0s - loss: 7.1750e-04 - mean_absolute_error: 0.0163 -
        val_loss: 31.9873 - val_mean_absolute_error: 3.6012
1157  epoch_end_callback epoch 6665 lr 3.125e-05
1158  Epoch 6667/10000
1159    - 0s - loss: 6.2766e-04 - mean_absolute_error: 0.0135 -
        val_loss: 32.0187 - val_mean_absolute_error: 3.6030
1160  epoch_end_callback epoch 6666 lr 3.125e-05
1161  Epoch 6668/10000
1162    - 0s - loss: 6.6305e-04 - mean_absolute_error: 0.0150 -
        val_loss: 31.9833 - val_mean_absolute_error: 3.6018
1163  epoch_end_callback epoch 6667 lr 3.125e-05
1164  Epoch 6669/10000
1165    - 0s - loss: 7.3005e-04 - mean_absolute_error: 0.0142 -
        val_loss: 31.9963 - val_mean_absolute_error: 3.6054
1166  epoch_end_callback epoch 6668 lr 3.125e-05
1167  Epoch 6670/10000
1168    - 0s - loss: 6.7976e-04 - mean_absolute_error: 0.0155 -
        val_loss: 32.0006 - val_mean_absolute_error: 3.6023
1169
1170  Epoch 06670: saving model to ./model/
        model_Epoch6670_val_mean_absolute_error3.602.h5
1171  epoch_end_callback epoch 6669 lr 3.125e-05
1172  Epoch 6671/10000
1173    - 0s - loss: 7.8067e-04 - mean_absolute_error: 0.0170 -
        val_loss: 32.0084 - val_mean_absolute_error: 3.6036
1174  epoch_end_callback epoch 6670 lr 3.125e-05
1175  Epoch 6672/10000
1176    - 0s - loss: 6.5558e-04 - mean_absolute_error: 0.0144 -
        val_loss: 31.9874 - val_mean_absolute_error: 3.5999
1177  epoch_end_callback epoch 6671 lr 3.125e-05
1178  Epoch 6673/10000
1179    - 0s - loss: 6.5013e-04 - mean_absolute_error: 0.0140 -
        val_loss: 31.9788 - val_mean_absolute_error: 3.6011
1180  epoch_end_callback epoch 6672 lr 3.125e-05
1181  Epoch 6674/10000
1182    - 0s - loss: 7.5675e-04 - mean_absolute_error: 0.0140 -
        val_loss: 32.0149 - val_mean_absolute_error: 3.6030
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1183 epoch_end_callback epoch 6673 lr 3.125e-05
1184 Epoch 6675/10000
1185  - 0s - loss: 6.5071e-04 - mean_absolute_error: 0.0151 -
     val_loss: 31.9812 - val_mean_absolute_error: 3.6037
1186 epoch_end_callback epoch 6674 lr 3.125e-05
1187 Epoch 6676/10000
1188  - 0s - loss: 6.5995e-04 - mean_absolute_error: 0.0146 -
     val_loss: 32.0385 - val_mean_absolute_error: 3.6025
1189 epoch_end_callback epoch 6675 lr 3.125e-05
1190 Epoch 6677/10000
1191  - 0s - loss: 6.3737e-04 - mean_absolute_error: 0.0143 -
     val_loss: 32.0118 - val_mean_absolute_error: 3.6057
1192 epoch_end_callback epoch 6676 lr 3.125e-05
1193 Epoch 6678/10000
1194  - 0s - loss: 7.7060e-04 - mean_absolute_error: 0.0165 -
     val_loss: 32.0151 - val_mean_absolute_error: 3.6041
1195 epoch_end_callback epoch 6677 lr 3.125e-05
1196 Epoch 6679/10000
1197  - 0s - loss: 6.0941e-04 - mean_absolute_error: 0.0124 -
     val_loss: 32.0386 - val_mean_absolute_error: 3.6032
1198 epoch_end_callback epoch 6678 lr 3.125e-05
1199 Epoch 6680/10000
1200  - 0s - loss: 7.2785e-04 - mean_absolute_error: 0.0149 -
     val_loss: 31.9934 - val_mean_absolute_error: 3.6043
1201
1202 Epoch 06680: saving model to ./model/
     model_Epoch6680_val_mean_absolute_error3.604.h5
1203 epoch_end_callback epoch 6679 lr 3.125e-05
1204 Epoch 6681/10000
1205  - 0s - loss: 7.0276e-04 - mean_absolute_error: 0.0140 -
     val_loss: 31.9640 - val_mean_absolute_error: 3.6016
1206 epoch_end_callback epoch 6680 lr 3.125e-05
1207 Epoch 6682/10000
1208  - 0s - loss: 6.4429e-04 - mean_absolute_error: 0.0136 -
     val_loss: 32.0065 - val_mean_absolute_error: 3.6034
1209 epoch_end_callback epoch 6681 lr 3.125e-05
1210 Epoch 6683/10000
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1211    - 0s - loss: 7.3716e-04 - mean_absolute_error: 0.0164 -
        val_loss: 31.9633 - val_mean_absolute_error: 3.6011
1212  epoch_end_callback epoch 6682 lr 3.125e-05
1213  Epoch 6684/10000
1214    - 0s - loss: 6.1138e-04 - mean_absolute_error: 0.0131 -
        val_loss: 31.9804 - val_mean_absolute_error: 3.6023
1215  epoch_end_callback epoch 6683 lr 3.125e-05
1216  Epoch 6685/10000
1217    - 0s - loss: 5.6970e-04 - mean_absolute_error: 0.0147 -
        val_loss: 31.9363 - val_mean_absolute_error: 3.6030
1218  epoch_end_callback epoch 6684 lr 3.125e-05
1219  Epoch 6686/10000
1220    - 0s - loss: 7.1281e-04 - mean_absolute_error: 0.0170 -
        val_loss: 31.9827 - val_mean_absolute_error: 3.6038
1221  epoch_end_callback epoch 6685 lr 3.125e-05
1222  Epoch 6687/10000
1223    - 0s - loss: 7.3184e-04 - mean_absolute_error: 0.0154 -
        val_loss: 32.0367 - val_mean_absolute_error: 3.6037
1224  epoch_end_callback epoch 6686 lr 3.125e-05
1225  Epoch 6688/10000
1226    - 0s - loss: 6.9716e-04 - mean_absolute_error: 0.0153 -
        val_loss: 32.0207 - val_mean_absolute_error: 3.6011
1227  epoch_end_callback epoch 6687 lr 3.125e-05
1228  Epoch 6689/10000
1229    - 0s - loss: 6.5604e-04 - mean_absolute_error: 0.0137 -
        val_loss: 31.9969 - val_mean_absolute_error: 3.6041
1230  epoch_end_callback epoch 6688 lr 3.125e-05
1231  Epoch 6690/10000
1232    - 0s - loss: 6.2007e-04 - mean_absolute_error: 0.0148 -
        val_loss: 31.9717 - val_mean_absolute_error: 3.6010
1233
1234  Epoch 06690: saving model to ./model/
        model_Epoch6690_val_mean_absolute_error3.601.h5
1235  epoch_end_callback epoch 6689 lr 3.125e-05
1236  Epoch 6691/10000
1237    - 0s - loss: 7.4977e-04 - mean_absolute_error: 0.0153 -
        val_loss: 31.9908 - val_mean_absolute_error: 3.6045
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1238  epoch_end_callback epoch 6690 lr 3.125e-05
1239  Epoch 6692/10000
1240   - 0s - loss: 7.0091e-04 - mean_absolute_error: 0.0139 -
      val_loss: 32.0344 - val_mean_absolute_error: 3.6037
1241  epoch_end_callback epoch 6691 lr 3.125e-05
1242  Epoch 6693/10000
1243   - 0s - loss: 6.5972e-04 - mean_absolute_error: 0.0145 -
      val_loss: 31.9862 - val_mean_absolute_error: 3.6018
1244  epoch_end_callback epoch 6692 lr 3.125e-05
1245  Epoch 6694/10000
1246   - 0s - loss: 7.3604e-04 - mean_absolute_error: 0.0161 -
      val_loss: 31.9829 - val_mean_absolute_error: 3.5996
1247  epoch_end_callback epoch 6693 lr 3.125e-05
1248  Epoch 6695/10000
1249   - 0s - loss: 6.3976e-04 - mean_absolute_error: 0.0144 -
      val_loss: 32.0483 - val_mean_absolute_error: 3.6061
1250  epoch_end_callback epoch 6694 lr 3.125e-05
1251  Epoch 6696/10000
1252   - 0s - loss: 6.2368e-04 - mean_absolute_error: 0.0139 -
      val_loss: 32.0011 - val_mean_absolute_error: 3.6015
1253  epoch_end_callback epoch 6695 lr 3.125e-05
1254  Epoch 6697/10000
1255   - 0s - loss: 7.5714e-04 - mean_absolute_error: 0.0150 -
      val_loss: 31.9976 - val_mean_absolute_error: 3.6052
1256  epoch_end_callback epoch 6696 lr 3.125e-05
1257  Epoch 6698/10000
1258   - 0s - loss: 6.7380e-04 - mean_absolute_error: 0.0150 -
      val_loss: 31.9880 - val_mean_absolute_error: 3.6017
1259  epoch_end_callback epoch 6697 lr 3.125e-05
1260  Epoch 6699/10000
1261   - 0s - loss: 6.1514e-04 - mean_absolute_error: 0.0133 -
      val_loss: 31.9921 - val_mean_absolute_error: 3.6018
1262  epoch_end_callback epoch 6698 lr 3.125e-05
1263  Epoch 6700/10000
1264   - 0s - loss: 6.6112e-04 - mean_absolute_error: 0.0163 -
      val_loss: 32.0223 - val_mean_absolute_error: 3.6046
1265
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1266   Epoch 06700: saving model to ./model/
       model_Epoch6700_val_mean_absolute_error3.605.h5
1267   epoch_end_callback epoch 6699 lr 3.125e-05
1268   Epoch 6701/10000
1269    - 0s - loss: 7.2418e-04 - mean_absolute_error: 0.0140 -
       val_loss: 32.0116 - val_mean_absolute_error: 3.6046
1270   epoch_end_callback epoch 6700 lr 3.125e-05
1271   Epoch 6702/10000
1272    - 0s - loss: 7.1420e-04 - mean_absolute_error: 0.0165 -
       val_loss: 31.9726 - val_mean_absolute_error: 3.6032
1273   epoch_end_callback epoch 6701 lr 3.125e-05
1274   Epoch 6703/10000
1275    - 0s - loss: 6.7972e-04 - mean_absolute_error: 0.0150 -
       val_loss: 32.0525 - val_mean_absolute_error: 3.6080
1276   epoch_end_callback epoch 6702 lr 3.125e-05
1277   Epoch 6704/10000
1278    - 0s - loss: 7.0224e-04 - mean_absolute_error: 0.0150 -
       val_loss: 31.9504 - val_mean_absolute_error: 3.6028
1279   epoch_end_callback epoch 6703 lr 3.125e-05
1280   Epoch 6705/10000
1281    - 0s - loss: 6.7357e-04 - mean_absolute_error: 0.0127 -
       val_loss: 32.0000 - val_mean_absolute_error: 3.6063
1282   epoch_end_callback epoch 6704 lr 3.125e-05
1283   Epoch 6706/10000
1284    - 0s - loss: 6.8027e-04 - mean_absolute_error: 0.0152 -
       val_loss: 32.0370 - val_mean_absolute_error: 3.6051
1285   epoch_end_callback epoch 6705 lr 3.125e-05
1286   Epoch 6707/10000
1287    - 0s - loss: 5.0905e-04 - mean_absolute_error: 0.0132 -
       val_loss: 31.9547 - val_mean_absolute_error: 3.6022
1288   epoch_end_callback epoch 6706 lr 3.125e-05
1289   Epoch 6708/10000
1290    - 0s - loss: 7.1264e-04 - mean_absolute_error: 0.0155 -
       val_loss: 32.0534 - val_mean_absolute_error: 3.6043
1291   epoch_end_callback epoch 6707 lr 3.125e-05
1292   Epoch 6709/10000
1293    - 0s - loss: 6.1604e-04 - mean_absolute_error: 0.0136 -
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1293  val_loss: 32.0154 - val_mean_absolute_error: 3.6018
1294  epoch_end_callback epoch 6708 lr 3.125e-05
1295  Epoch 6710/10000
1296   - 0s - loss: 6.5782e-04 - mean_absolute_error: 0.0142 -
      val_loss: 32.0165 - val_mean_absolute_error: 3.6040
1297
1298  Epoch 06710: saving model to ./model/
      model_Epoch6710_val_mean_absolute_error3.604.h5
1299  epoch_end_callback epoch 6709 lr 3.125e-05
1300  Epoch 6711/10000
1301   - 0s - loss: 7.3167e-04 - mean_absolute_error: 0.0164 -
      val_loss: 32.0123 - val_mean_absolute_error: 3.6045
1302  epoch_end_callback epoch 6710 lr 3.125e-05
1303  Epoch 6712/10000
1304   - 0s - loss: 5.7015e-04 - mean_absolute_error: 0.0126 -
      val_loss: 32.0042 - val_mean_absolute_error: 3.6054
1305  epoch_end_callback epoch 6711 lr 3.125e-05
1306  Epoch 6713/10000
1307   - 0s - loss: 6.5215e-04 - mean_absolute_error: 0.0145 -
      val_loss: 31.9806 - val_mean_absolute_error: 3.6045
1308  epoch_end_callback epoch 6712 lr 3.125e-05
1309  Epoch 6714/10000
1310   - 0s - loss: 7.0199e-04 - mean_absolute_error: 0.0154 -
      val_loss: 31.9909 - val_mean_absolute_error: 3.6048
1311  epoch_end_callback epoch 6713 lr 3.125e-05
1312  Epoch 6715/10000
1313   - 0s - loss: 6.1583e-04 - mean_absolute_error: 0.0143 -
      val_loss: 32.0200 - val_mean_absolute_error: 3.6067
1314  epoch_end_callback epoch 6714 lr 3.125e-05
1315  Epoch 6716/10000
1316   - 0s - loss: 6.9008e-04 - mean_absolute_error: 0.0158 -
      val_loss: 31.9688 - val_mean_absolute_error: 3.6011
1317  epoch_end_callback epoch 6715 lr 3.125e-05
1318  Epoch 6717/10000
1319   - 0s - loss: 5.8302e-04 - mean_absolute_error: 0.0146 -
      val_loss: 31.9990 - val_mean_absolute_error: 3.6023
1320  epoch_end_callback epoch 6716 lr 3.125e-05
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1321  Epoch 6718/10000
1322   - 0s - loss: 5.4424e-04 - mean_absolute_error: 0.0148 -
      val_loss: 31.9097 - val_mean_absolute_error: 3.6006
1323  epoch_end_callback epoch 6717 lr 3.125e-05
1324  Epoch 6719/10000
1325   - 0s - loss: 5.3814e-04 - mean_absolute_error: 0.0137 -
      val_loss: 32.0274 - val_mean_absolute_error: 3.6030
1326  epoch_end_callback epoch 6718 lr 3.125e-05
1327  Epoch 6720/10000
1328   - 0s - loss: 6.7029e-04 - mean_absolute_error: 0.0161 -
      val_loss: 31.9601 - val_mean_absolute_error: 3.6011
1329
1330  Epoch 06720: saving model to ./model/
      model_Epoch6720_val_mean_absolute_error3.601.h5
1331  epoch_end_callback epoch 6719 lr 3.125e-05
1332  Epoch 6721/10000
1333   - 0s - loss: 4.8537e-04 - mean_absolute_error: 0.0121 -
      val_loss: 32.0278 - val_mean_absolute_error: 3.6025
1334  epoch_end_callback epoch 6720 lr 3.125e-05
1335  Epoch 6722/10000
1336   - 0s - loss: 7.1550e-04 - mean_absolute_error: 0.0158 -
      val_loss: 31.9966 - val_mean_absolute_error: 3.6068
1337  epoch_end_callback epoch 6721 lr 3.125e-05
1338  Epoch 6723/10000
1339   - 0s - loss: 6.0830e-04 - mean_absolute_error: 0.0151 -
      val_loss: 31.9986 - val_mean_absolute_error: 3.6044
1340  epoch_end_callback epoch 6722 lr 3.125e-05
1341  Epoch 6724/10000
1342   - 0s - loss: 6.5710e-04 - mean_absolute_error: 0.0154 -
      val_loss: 31.9595 - val_mean_absolute_error: 3.6049
1343  epoch_end_callback epoch 6723 lr 3.125e-05
1344  Epoch 6725/10000
1345   - 0s - loss: 6.9811e-04 - mean_absolute_error: 0.0141 -
      val_loss: 31.9542 - val_mean_absolute_error: 3.6028
1346  epoch_end_callback epoch 6724 lr 3.125e-05
1347  Epoch 6726/10000
1348   - 0s - loss: 6.2483e-04 - mean_absolute_error: 0.0140 -
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1348  val_loss: 31.9453 - val_mean_absolute_error: 3.6039
1349  epoch_end_callback epoch 6725 lr 3.125e-05
1350  Epoch 6727/10000
1351   - 0s - loss: 7.1783e-04 - mean_absolute_error: 0.0163 -
      val_loss: 32.0097 - val_mean_absolute_error: 3.6012
1352  epoch_end_callback epoch 6726 lr 3.125e-05
1353  Epoch 6728/10000
1354   - 0s - loss: 6.1568e-04 - mean_absolute_error: 0.0135 -
      val_loss: 31.9899 - val_mean_absolute_error: 3.6032
1355  epoch_end_callback epoch 6727 lr 3.125e-05
1356  Epoch 6729/10000
1357   - 0s - loss: 5.7532e-04 - mean_absolute_error: 0.0128 -
      val_loss: 31.9895 - val_mean_absolute_error: 3.6025
1358  epoch_end_callback epoch 6728 lr 3.125e-05
1359  Epoch 6730/10000
1360   - 0s - loss: 8.4011e-04 - mean_absolute_error: 0.0155 -
      val_loss: 31.9912 - val_mean_absolute_error: 3.6034
1361
1362  Epoch 06730: saving model to ./model/
      model_Epoch6730_val_mean_absolute_error3.603.h5
1363  epoch_end_callback epoch 6729 lr 3.125e-05
1364  Epoch 6731/10000
1365   - 0s - loss: 5.8777e-04 - mean_absolute_error: 0.0129 -
      val_loss: 31.9721 - val_mean_absolute_error: 3.6038
1366  epoch_end_callback epoch 6730 lr 3.125e-05
1367  Epoch 6732/10000
1368   - 0s - loss: 6.4096e-04 - mean_absolute_error: 0.0143 -
      val_loss: 32.0414 - val_mean_absolute_error: 3.6057
1369  epoch_end_callback epoch 6731 lr 3.125e-05
1370  Epoch 6733/10000
1371   - 0s - loss: 7.0797e-04 - mean_absolute_error: 0.0146 -
      val_loss: 31.9975 - val_mean_absolute_error: 3.6033
1372  epoch_end_callback epoch 6732 lr 3.125e-05
1373  Epoch 6734/10000
1374   - 0s - loss: 6.0400e-04 - mean_absolute_error: 0.0135 -
      val_loss: 31.9942 - val_mean_absolute_error: 3.6029
1375  epoch_end_callback epoch 6733 lr 3.125e-05
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1376   Epoch 6735/10000
1377    - 0s - loss: 6.4976e-04 - mean_absolute_error: 0.0144 -
       val_loss: 31.9751 - val_mean_absolute_error: 3.6030
1378   epoch_end_callback epoch 6734 lr 3.125e-05
1379   Epoch 6736/10000
1380    - 0s - loss: 6.7013e-04 - mean_absolute_error: 0.0147 -
       val_loss: 31.9826 - val_mean_absolute_error: 3.6038
1381   epoch_end_callback epoch 6735 lr 3.125e-05
1382   Epoch 6737/10000
1383    - 0s - loss: 6.2417e-04 - mean_absolute_error: 0.0143 -
       val_loss: 31.9860 - val_mean_absolute_error: 3.6050
1384   epoch_end_callback epoch 6736 lr 3.125e-05
1385   Epoch 6738/10000
1386    - 0s - loss: 6.5134e-04 - mean_absolute_error: 0.0155 -
       val_loss: 31.9779 - val_mean_absolute_error: 3.6019
1387   epoch_end_callback epoch 6737 lr 3.125e-05
1388   Epoch 6739/10000
1389    - 0s - loss: 5.8385e-04 - mean_absolute_error: 0.0127 -
       val_loss: 31.9751 - val_mean_absolute_error: 3.6064
1390   epoch_end_callback epoch 6738 lr 3.125e-05
1391   Epoch 6740/10000
1392    - 0s - loss: 6.8737e-04 - mean_absolute_error: 0.0159 -
       val_loss: 32.0451 - val_mean_absolute_error: 3.6068
1393
1394   Epoch 06740: saving model to ./model/
       model_Epoch6740_val_mean_absolute_error3.607.h5
1395   epoch_end_callback epoch 6739 lr 3.125e-05
1396   Epoch 6741/10000
1397    - 0s - loss: 6.1085e-04 - mean_absolute_error: 0.0134 -
       val_loss: 31.9598 - val_mean_absolute_error: 3.6058
1398   epoch_end_callback epoch 6740 lr 3.125e-05
1399   Epoch 6742/10000
1400    - 0s - loss: 5.5269e-04 - mean_absolute_error: 0.0133 -
       val_loss: 32.0055 - val_mean_absolute_error: 3.6030
1401   epoch_end_callback epoch 6741 lr 3.125e-05
1402   Epoch 6743/10000
1403    - 0s - loss: 7.5543e-04 - mean_absolute_error: 0.0164 -
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1403  val_loss: 32.0590 - val_mean_absolute_error: 3.6043
1404  epoch_end_callback epoch 6742 lr 3.125e-05
1405  Epoch 6744/10000
1406   - 0s - loss: 5.8094e-04 - mean_absolute_error: 0.0135 -
      val_loss: 31.9942 - val_mean_absolute_error: 3.6016
1407  epoch_end_callback epoch 6743 lr 3.125e-05
1408  Epoch 6745/10000
1409   - 0s - loss: 7.0396e-04 - mean_absolute_error: 0.0148 -
      val_loss: 31.9165 - val_mean_absolute_error: 3.6021
1410  epoch_end_callback epoch 6744 lr 3.125e-05
1411  Epoch 6746/10000
1412   - 0s - loss: 6.4004e-04 - mean_absolute_error: 0.0141 -
      val_loss: 32.0427 - val_mean_absolute_error: 3.6061
1413  epoch_end_callback epoch 6745 lr 3.125e-05
1414  Epoch 6747/10000
1415   - 0s - loss: 6.6873e-04 - mean_absolute_error: 0.0164 -
      val_loss: 32.0058 - val_mean_absolute_error: 3.6051
1416  epoch_end_callback epoch 6746 lr 3.125e-05
1417  Epoch 6748/10000
1418   - 0s - loss: 6.5515e-04 - mean_absolute_error: 0.0142 -
      val_loss: 32.0021 - val_mean_absolute_error: 3.6025
1419  epoch_end_callback epoch 6747 lr 3.125e-05
1420  Epoch 6749/10000
1421   - 0s - loss: 5.7999e-04 - mean_absolute_error: 0.0147 -
      val_loss: 31.9655 - val_mean_absolute_error: 3.6020
1422  epoch_end_callback epoch 6748 lr 3.125e-05
1423  Epoch 6750/10000
1424   - 0s - loss: 6.4969e-04 - mean_absolute_error: 0.0141 -
      val_loss: 31.9744 - val_mean_absolute_error: 3.6018
1425
1426  Epoch 06750: saving model to ./model/
      model_Epoch6750_val_mean_absolute_error3.602.h5
1427  epoch_end_callback epoch 6749 lr 3.125e-05
1428  Epoch 6751/10000
1429   - 0s - loss: 6.9077e-04 - mean_absolute_error: 0.0151 -
      val_loss: 32.0283 - val_mean_absolute_error: 3.6047
1430  epoch_end_callback epoch 6750 lr 3.125e-05
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1431  Epoch 6752/10000
1432   - 0s - loss: 6.1956e-04 - mean_absolute_error: 0.0142 -
       val_loss: 31.9636 - val_mean_absolute_error: 3.5987
1433  epoch_end_callback epoch 6751 lr 3.125e-05
1434  Epoch 6753/10000
1435   - 0s - loss: 7.8856e-04 - mean_absolute_error: 0.0166 -
       val_loss: 32.0098 - val_mean_absolute_error: 3.6040
1436  epoch_end_callback epoch 6752 lr 3.125e-05
1437  Epoch 6754/10000
1438   - 0s - loss: 4.6553e-04 - mean_absolute_error: 0.0119 -
       val_loss: 32.0005 - val_mean_absolute_error: 3.6059
1439  epoch_end_callback epoch 6753 lr 3.125e-05
1440  Epoch 6755/10000
1441   - 0s - loss: 6.3364e-04 - mean_absolute_error: 0.0151 -
       val_loss: 32.0027 - val_mean_absolute_error: 3.6051
1442  epoch_end_callback epoch 6754 lr 3.125e-05
1443  Epoch 6756/10000
1444   - 0s - loss: 7.4387e-04 - mean_absolute_error: 0.0137 -
       val_loss: 32.0645 - val_mean_absolute_error: 3.6093
1445  epoch_end_callback epoch 6755 lr 3.125e-05
1446  Epoch 6757/10000
1447   - 0s - loss: 7.2255e-04 - mean_absolute_error: 0.0143 -
       val_loss: 32.0096 - val_mean_absolute_error: 3.6054
1448  epoch_end_callback epoch 6756 lr 3.125e-05
1449  Epoch 6758/10000
1450   - 0s - loss: 7.4203e-04 - mean_absolute_error: 0.0157 -
       val_loss: 32.0387 - val_mean_absolute_error: 3.6075
1451  epoch_end_callback epoch 6757 lr 3.125e-05
1452  Epoch 6759/10000
1453   - 0s - loss: 5.1738e-04 - mean_absolute_error: 0.0123 -
       val_loss: 32.0067 - val_mean_absolute_error: 3.6054
1454  epoch_end_callback epoch 6758 lr 3.125e-05
1455  Epoch 6760/10000
1456   - 0s - loss: 7.6813e-04 - mean_absolute_error: 0.0167 -
       val_loss: 32.0071 - val_mean_absolute_error: 3.6032
1457
1458  Epoch 06760: saving model to ./model/
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1458  model_Epoch6760_val_mean_absolute_error3.603.h5
1459  epoch_end_callback epoch 6759 lr 3.125e-05
1460  Epoch 6761/10000
1461   - 0s - loss: 5.9991e-04 - mean_absolute_error: 0.0135 -
       val_loss: 32.0200 - val_mean_absolute_error: 3.6041
1462  epoch_end_callback epoch 6760 lr 3.125e-05
1463  Epoch 6762/10000
1464   - 0s - loss: 8.3049e-04 - mean_absolute_error: 0.0158 -
       val_loss: 31.9652 - val_mean_absolute_error: 3.5983
1465  epoch_end_callback epoch 6761 lr 3.125e-05
1466  Epoch 6763/10000
1467   - 0s - loss: 6.2969e-04 - mean_absolute_error: 0.0141 -
       val_loss: 32.0001 - val_mean_absolute_error: 3.6075
1468  epoch_end_callback epoch 6762 lr 3.125e-05
1469  Epoch 6764/10000
1470   - 0s - loss: 5.8057e-04 - mean_absolute_error: 0.0132 -
       val_loss: 32.0422 - val_mean_absolute_error: 3.6065
1471  epoch_end_callback epoch 6763 lr 3.125e-05
1472  Epoch 6765/10000
1473   - 0s - loss: 6.8891e-04 - mean_absolute_error: 0.0151 -
       val_loss: 32.0031 - val_mean_absolute_error: 3.6078
1474  epoch_end_callback epoch 6764 lr 3.125e-05
1475  Epoch 6766/10000
1476   - 0s - loss: 6.6906e-04 - mean_absolute_error: 0.0148 -
       val_loss: 31.9595 - val_mean_absolute_error: 3.6011
1477  epoch_end_callback epoch 6765 lr 3.125e-05
1478  Epoch 6767/10000
1479   - 0s - loss: 6.2633e-04 - mean_absolute_error: 0.0149 -
       val_loss: 32.0289 - val_mean_absolute_error: 3.6060
1480  epoch_end_callback epoch 6766 lr 3.125e-05
1481  Epoch 6768/10000
1482   - 0s - loss: 5.9378e-04 - mean_absolute_error: 0.0148 -
       val_loss: 31.9549 - val_mean_absolute_error: 3.6018
1483  epoch_end_callback epoch 6767 lr 3.125e-05
1484  Epoch 6769/10000
1485   - 0s - loss: 6.5460e-04 - mean_absolute_error: 0.0149 -
       val_loss: 32.0049 - val_mean_absolute_error: 3.6035
```

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1486  epoch_end_callback epoch 6768 lr 3.125e-05
1487  Epoch 6770/10000
1488   - 0s - loss: 7.2916e-04 - mean_absolute_error: 0.0139 -
      val_loss: 32.0174 - val_mean_absolute_error: 3.6048
1489
1490  Epoch 06770: saving model to ./model/
      model_Epoch6770_val_mean_absolute_error3.605.h5
1491  epoch_end_callback epoch 6769 lr 3.125e-05
1492  Epoch 6771/10000
1493   - 0s - loss: 6.8562e-04 - mean_absolute_error: 0.0145 -
      val_loss: 31.9846 - val_mean_absolute_error: 3.6027
1494  epoch_end_callback epoch 6770 lr 3.125e-05
1495  Epoch 6772/10000
1496   - 0s - loss: 6.2488e-04 - mean_absolute_error: 0.0138 -
      val_loss: 31.9950 - val_mean_absolute_error: 3.6007
1497  epoch_end_callback epoch 6771 lr 3.125e-05
1498  Epoch 6773/10000
1499   - 0s - loss: 7.4273e-04 - mean_absolute_error: 0.0162 -
      val_loss: 31.9945 - val_mean_absolute_error: 3.6028
1500  epoch_end_callback epoch 6772 lr 3.125e-05
1501  Epoch 6774/10000
1502   - 0s - loss: 5.2565e-04 - mean_absolute_error: 0.0138 -
      val_loss: 32.0018 - val_mean_absolute_error: 3.6042
1503  epoch_end_callback epoch 6773 lr 3.125e-05
1504  Epoch 6775/10000
1505   - 0s - loss: 6.9770e-04 - mean_absolute_error: 0.0148 -
      val_loss: 32.0323 - val_mean_absolute_error: 3.6043
1506  epoch_end_callback epoch 6774 lr 3.125e-05
1507  Epoch 6776/10000
1508   - 0s - loss: 5.9429e-04 - mean_absolute_error: 0.0133 -
      val_loss: 31.9233 - val_mean_absolute_error: 3.5977
1509  epoch_end_callback epoch 6775 lr 3.125e-05
1510  Epoch 6777/10000
1511   - 0s - loss: 6.6647e-04 - mean_absolute_error: 0.0154 -
      val_loss: 31.9833 - val_mean_absolute_error: 3.6012
1512  epoch_end_callback epoch 6776 lr 3.125e-05
1513  Epoch 6778/10000
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1514    - 0s - loss: 6.9449e-04 - mean_absolute_error: 0.0154 -
        val_loss: 32.0286 - val_mean_absolute_error: 3.6073
1515 epoch_end_callback epoch 6777 lr 3.125e-05
1516 Epoch 6779/10000
1517    - 0s - loss: 6.9656e-04 - mean_absolute_error: 0.0157 -
        val_loss: 31.9742 - val_mean_absolute_error: 3.6072
1518 epoch_end_callback epoch 6778 lr 3.125e-05
1519 Epoch 6780/10000
1520    - 0s - loss: 6.3654e-04 - mean_absolute_error: 0.0144 -
        val_loss: 31.9769 - val_mean_absolute_error: 3.6002
1521
1522 Epoch 06780: saving model to ./model/
        model_Epoch6780_val_mean_absolute_error3.600.h5
1523 epoch_end_callback epoch 6779 lr 3.125e-05
1524 Epoch 6781/10000
1525    - 0s - loss: 6.4063e-04 - mean_absolute_error: 0.0144 -
        val_loss: 31.9808 - val_mean_absolute_error: 3.6035
1526 epoch_end_callback epoch 6780 lr 3.125e-05
1527 Epoch 6782/10000
1528    - 0s - loss: 6.5054e-04 - mean_absolute_error: 0.0144 -
        val_loss: 31.9635 - val_mean_absolute_error: 3.6030
1529 epoch_end_callback epoch 6781 lr 3.125e-05
1530 Epoch 6783/10000
1531    - 0s - loss: 6.1897e-04 - mean_absolute_error: 0.0142 -
        val_loss: 31.9982 - val_mean_absolute_error: 3.6012
1532 epoch_end_callback epoch 6782 lr 3.125e-05
1533 Epoch 6784/10000
1534    - 0s - loss: 6.2707e-04 - mean_absolute_error: 0.0149 -
        val_loss: 32.0766 - val_mean_absolute_error: 3.6088
1535 epoch_end_callback epoch 6783 lr 3.125e-05
1536 Epoch 6785/10000
1537    - 0s - loss: 6.5769e-04 - mean_absolute_error: 0.0140 -
        val_loss: 32.0166 - val_mean_absolute_error: 3.6067
1538 epoch_end_callback epoch 6784 lr 3.125e-05
1539 Epoch 6786/10000
1540    - 0s - loss: 6.0402e-04 - mean_absolute_error: 0.0145 -
        val_loss: 32.0089 - val_mean_absolute_error: 3.6033
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1541  epoch_end_callback epoch 6785 lr 3.125e-05
1542  Epoch 6787/10000
1543   - 0s - loss: 6.1763e-04 - mean_absolute_error: 0.0133 -
      val_loss: 32.0566 - val_mean_absolute_error: 3.6048
1544  epoch_end_callback epoch 6786 lr 3.125e-05
1545  Epoch 6788/10000
1546   - 0s - loss: 7.4609e-04 - mean_absolute_error: 0.0164 -
      val_loss: 32.0153 - val_mean_absolute_error: 3.6037
1547  epoch_end_callback epoch 6787 lr 3.125e-05
1548  Epoch 6789/10000
1549   - 0s - loss: 5.8150e-04 - mean_absolute_error: 0.0133 -
      val_loss: 32.0233 - val_mean_absolute_error: 3.6030
1550  epoch_end_callback epoch 6788 lr 3.125e-05
1551  Epoch 6790/10000
1552   - 0s - loss: 6.4156e-04 - mean_absolute_error: 0.0146 -
      val_loss: 32.0059 - val_mean_absolute_error: 3.6080
1553
1554  Epoch 06790: saving model to ./model/
      model_Epoch6790_val_mean_absolute_error3.608.h5
1555  epoch_end_callback epoch 6789 lr 3.125e-05
1556  Epoch 6791/10000
1557   - 0s - loss: 6.2048e-04 - mean_absolute_error: 0.0154 -
      val_loss: 32.0275 - val_mean_absolute_error: 3.6055
1558  epoch_end_callback epoch 6790 lr 3.125e-05
1559  Epoch 6792/10000
1560   - 0s - loss: 6.5066e-04 - mean_absolute_error: 0.0147 -
      val_loss: 32.0849 - val_mean_absolute_error: 3.6071
1561  epoch_end_callback epoch 6791 lr 3.125e-05
1562  Epoch 6793/10000
1563   - 0s - loss: 5.5261e-04 - mean_absolute_error: 0.0132 -
      val_loss: 31.9600 - val_mean_absolute_error: 3.6038
1564  epoch_end_callback epoch 6792 lr 3.125e-05
1565  Epoch 6794/10000
1566   - 0s - loss: 7.0515e-04 - mean_absolute_error: 0.0157 -
      val_loss: 31.9987 - val_mean_absolute_error: 3.6071
1567  epoch_end_callback epoch 6793 lr 3.125e-05
1568  Epoch 6795/10000
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1569    - 0s - loss: 6.0486e-04 - mean_absolute_error: 0.0143 -
        val_loss: 32.0151 - val_mean_absolute_error: 3.6057
1570 epoch_end_callback epoch 6794 lr 3.125e-05
1571 Epoch 6796/10000
1572    - 0s - loss: 6.6534e-04 - mean_absolute_error: 0.0154 -
        val_loss: 31.9783 - val_mean_absolute_error: 3.6041
1573 epoch_end_callback epoch 6795 lr 3.125e-05
1574 Epoch 6797/10000
1575    - 0s - loss: 6.1059e-04 - mean_absolute_error: 0.0141 -
        val_loss: 32.1108 - val_mean_absolute_error: 3.6058
1576 epoch_end_callback epoch 6796 lr 3.125e-05
1577 Epoch 6798/10000
1578    - 0s - loss: 7.1019e-04 - mean_absolute_error: 0.0142 -
        val_loss: 32.0773 - val_mean_absolute_error: 3.6078
1579 epoch_end_callback epoch 6797 lr 3.125e-05
1580 Epoch 6799/10000
1581    - 0s - loss: 6.4708e-04 - mean_absolute_error: 0.0125 -
        val_loss: 32.0138 - val_mean_absolute_error: 3.6062
1582 epoch_end_callback epoch 6798 lr 3.125e-05
1583 Epoch 6800/10000
1584    - 0s - loss: 6.6912e-04 - mean_absolute_error: 0.0157 -
        val_loss: 32.0375 - val_mean_absolute_error: 3.6092
1585
1586 Epoch 06800: saving model to ./model/
     model_Epoch6800_val_mean_absolute_error3.609.h5
1587 epoch_end_callback epoch 6799 lr 3.125e-05
1588 Epoch 6801/10000
1589    - 0s - loss: 5.8991e-04 - mean_absolute_error: 0.0133 -
        val_loss: 32.0587 - val_mean_absolute_error: 3.6045
1590 epoch_end_callback epoch 6800 lr 3.125e-05
1591 Epoch 6802/10000
1592    - 0s - loss: 6.4048e-04 - mean_absolute_error: 0.0139 -
        val_loss: 32.0465 - val_mean_absolute_error: 3.6106
1593 epoch_end_callback epoch 6801 lr 3.125e-05
1594 Epoch 6803/10000
1595    - 0s - loss: 6.4366e-04 - mean_absolute_error: 0.0147 -
        val_loss: 32.0093 - val_mean_absolute_error: 3.6048
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1596  epoch_end_callback epoch 6802 lr 3.125e-05
1597  Epoch 6804/10000
1598   - 0s - loss: 6.4224e-04 - mean_absolute_error: 0.0138 -
      val_loss: 32.0550 - val_mean_absolute_error: 3.6053
1599  epoch_end_callback epoch 6803 lr 3.125e-05
1600  Epoch 6805/10000
1601   - 0s - loss: 6.5518e-04 - mean_absolute_error: 0.0145 -
      val_loss: 32.0270 - val_mean_absolute_error: 3.6060
1602  epoch_end_callback epoch 6804 lr 3.125e-05
1603  Epoch 6806/10000
1604   - 0s - loss: 7.1110e-04 - mean_absolute_error: 0.0155 -
      val_loss: 32.0509 - val_mean_absolute_error: 3.6068
1605  epoch_end_callback epoch 6805 lr 3.125e-05
1606  Epoch 6807/10000
1607   - 0s - loss: 6.4182e-04 - mean_absolute_error: 0.0142 -
      val_loss: 32.0409 - val_mean_absolute_error: 3.6000
1608  epoch_end_callback epoch 6806 lr 3.125e-05
1609  Epoch 6808/10000
1610   - 0s - loss: 6.8377e-04 - mean_absolute_error: 0.0161 -
      val_loss: 32.0473 - val_mean_absolute_error: 3.6061
1611  epoch_end_callback epoch 6807 lr 3.125e-05
1612  Epoch 6809/10000
1613   - 0s - loss: 6.4933e-04 - mean_absolute_error: 0.0151 -
      val_loss: 32.0371 - val_mean_absolute_error: 3.6039
1614  epoch_end_callback epoch 6808 lr 3.125e-05
1615  Epoch 6810/10000
1616   - 0s - loss: 5.7531e-04 - mean_absolute_error: 0.0140 -
      val_loss: 32.0413 - val_mean_absolute_error: 3.6080
1617
1618  Epoch 06810: saving model to ./model/
      model_Epoch6810_val_mean_absolute_error3.608.h5
1619  epoch_end_callback epoch 6809 lr 3.125e-05
1620  Epoch 6811/10000
1621   - 0s - loss: 6.7629e-04 - mean_absolute_error: 0.0151 -
      val_loss: 32.0401 - val_mean_absolute_error: 3.6083
1622  epoch_end_callback epoch 6810 lr 3.125e-05
1623  Epoch 6812/10000
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1624    - 0s - loss: 5.8134e-04 - mean_absolute_error: 0.0129 -
        val_loss: 31.9884 - val_mean_absolute_error: 3.6039
1625   epoch_end_callback epoch 6811 lr 3.125e-05
1626   Epoch 6813/10000
1627    - 0s - loss: 6.9046e-04 - mean_absolute_error: 0.0145 -
        val_loss: 31.9824 - val_mean_absolute_error: 3.6020
1628   epoch_end_callback epoch 6812 lr 3.125e-05
1629   Epoch 6814/10000
1630    - 0s - loss: 6.3163e-04 - mean_absolute_error: 0.0141 -
        val_loss: 32.0365 - val_mean_absolute_error: 3.6055
1631   epoch_end_callback epoch 6813 lr 3.125e-05
1632   Epoch 6815/10000
1633    - 0s - loss: 6.0167e-04 - mean_absolute_error: 0.0132 -
        val_loss: 31.9445 - val_mean_absolute_error: 3.6049
1634   epoch_end_callback epoch 6814 lr 3.125e-05
1635   Epoch 6816/10000
1636    - 0s - loss: 6.0488e-04 - mean_absolute_error: 0.0137 -
        val_loss: 32.1114 - val_mean_absolute_error: 3.6103
1637   epoch_end_callback epoch 6815 lr 3.125e-05
1638   Epoch 6817/10000
1639    - 0s - loss: 6.4103e-04 - mean_absolute_error: 0.0156 -
        val_loss: 32.0254 - val_mean_absolute_error: 3.6062
1640   epoch_end_callback epoch 6816 lr 3.125e-05
1641   Epoch 6818/10000
1642    - 0s - loss: 5.9744e-04 - mean_absolute_error: 0.0139 -
        val_loss: 32.0291 - val_mean_absolute_error: 3.6061
1643   epoch_end_callback epoch 6817 lr 3.125e-05
1644   Epoch 6819/10000
1645    - 0s - loss: 6.6507e-04 - mean_absolute_error: 0.0144 -
        val_loss: 31.9919 - val_mean_absolute_error: 3.6043
1646   epoch_end_callback epoch 6818 lr 3.125e-05
1647   Epoch 6820/10000
1648    - 0s - loss: 6.1757e-04 - mean_absolute_error: 0.0138 -
        val_loss: 32.0146 - val_mean_absolute_error: 3.6039
1649
1650   Epoch 06820: saving model to ./model/
        model_Epoch6820_val_mean_absolute_error3.604.h5
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1651 epoch_end_callback epoch 6819 lr 3.125e-05
1652 Epoch 6821/10000
1653  - 0s - loss: 6.2214e-04 - mean_absolute_error: 0.0153 -
     val_loss: 31.9825 - val_mean_absolute_error: 3.6048
1654 epoch_end_callback epoch 6820 lr 3.125e-05
1655 Epoch 6822/10000
1656  - 0s - loss: 8.0581e-04 - mean_absolute_error: 0.0163 -
     val_loss: 32.0256 - val_mean_absolute_error: 3.6083
1657 epoch_end_callback epoch 6821 lr 3.125e-05
1658 Epoch 6823/10000
1659  - 0s - loss: 5.9201e-04 - mean_absolute_error: 0.0134 -
     val_loss: 31.9798 - val_mean_absolute_error: 3.6044
1660 epoch_end_callback epoch 6822 lr 3.125e-05
1661 Epoch 6824/10000
1662  - 0s - loss: 6.6966e-04 - mean_absolute_error: 0.0164 -
     val_loss: 31.9480 - val_mean_absolute_error: 3.6024
1663 epoch_end_callback epoch 6823 lr 3.125e-05
1664 Epoch 6825/10000
1665  - 0s - loss: 5.6081e-04 - mean_absolute_error: 0.0126 -
     val_loss: 32.0286 - val_mean_absolute_error: 3.6053
1666 epoch_end_callback epoch 6824 lr 3.125e-05
1667 Epoch 6826/10000
1668  - 0s - loss: 6.9205e-04 - mean_absolute_error: 0.0159 -
     val_loss: 32.0460 - val_mean_absolute_error: 3.6040
1669 epoch_end_callback epoch 6825 lr 3.125e-05
1670 Epoch 6827/10000
1671  - 0s - loss: 5.2400e-04 - mean_absolute_error: 0.0138 -
     val_loss: 32.0601 - val_mean_absolute_error: 3.6070
1672 epoch_end_callback epoch 6826 lr 3.125e-05
1673 Epoch 6828/10000
1674  - 0s - loss: 7.0985e-04 - mean_absolute_error: 0.0162 -
     val_loss: 31.9594 - val_mean_absolute_error: 3.6048
1675 epoch_end_callback epoch 6827 lr 3.125e-05
1676 Epoch 6829/10000
1677  - 0s - loss: 6.7294e-04 - mean_absolute_error: 0.0161 -
     val_loss: 31.9643 - val_mean_absolute_error: 3.6016
1678 epoch_end_callback epoch 6828 lr 3.125e-05
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1679  Epoch 6830/10000
1680   - 0s - loss: 7.2491e-04 - mean_absolute_error: 0.0149 -
      val_loss: 32.0199 - val_mean_absolute_error: 3.6070
1681
1682  Epoch 06830: saving model to ./model/
      model_Epoch6830_val_mean_absolute_error3.607.h5
1683  epoch_end_callback epoch 6829 lr 3.125e-05
1684  Epoch 6831/10000
1685   - 0s - loss: 5.7801e-04 - mean_absolute_error: 0.0135 -
      val_loss: 31.9970 - val_mean_absolute_error: 3.6041
1686  epoch_end_callback epoch 6830 lr 3.125e-05
1687  Epoch 6832/10000
1688   - 0s - loss: 6.6165e-04 - mean_absolute_error: 0.0153 -
      val_loss: 31.9349 - val_mean_absolute_error: 3.5994
1689  epoch_end_callback epoch 6831 lr 3.125e-05
1690  Epoch 6833/10000
1691   - 0s - loss: 6.6014e-04 - mean_absolute_error: 0.0151 -
      val_loss: 32.0112 - val_mean_absolute_error: 3.6033
1692  epoch_end_callback epoch 6832 lr 3.125e-05
1693  Epoch 6834/10000
1694   - 0s - loss: 6.1747e-04 - mean_absolute_error: 0.0134 -
      val_loss: 32.0814 - val_mean_absolute_error: 3.6048
1695  epoch_end_callback epoch 6833 lr 3.125e-05
1696  Epoch 6835/10000
1697   - 0s - loss: 7.9371e-04 - mean_absolute_error: 0.0165 -
      val_loss: 31.9939 - val_mean_absolute_error: 3.6051
1698  epoch_end_callback epoch 6834 lr 3.125e-05
1699  Epoch 6836/10000
1700   - 0s - loss: 6.8682e-04 - mean_absolute_error: 0.0143 -
      val_loss: 32.0219 - val_mean_absolute_error: 3.6042
1701  epoch_end_callback epoch 6835 lr 3.125e-05
1702  Epoch 6837/10000
1703   - 0s - loss: 6.7786e-04 - mean_absolute_error: 0.0149 -
      val_loss: 32.0060 - val_mean_absolute_error: 3.6039
1704  epoch_end_callback epoch 6836 lr 3.125e-05
1705  Epoch 6838/10000
1706   - 0s - loss: 5.4220e-04 - mean_absolute_error: 0.0124 -
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1706  val_loss: 32.0572 - val_mean_absolute_error: 3.6073
1707  epoch_end_callback epoch 6837 lr 3.125e-05
1708  Epoch 6839/10000
1709   - 0s - loss: 5.9314e-04 - mean_absolute_error: 0.0138 -
      val_loss: 31.9970 - val_mean_absolute_error: 3.6021
1710  epoch_end_callback epoch 6838 lr 3.125e-05
1711  Epoch 6840/10000
1712   - 0s - loss: 6.8141e-04 - mean_absolute_error: 0.0158 -
      val_loss: 32.0427 - val_mean_absolute_error: 3.6036
1713
1714  Epoch 06840: saving model to ./model/
      model_Epoch6840_val_mean_absolute_error3.604.h5
1715  epoch_end_callback epoch 6839 lr 3.125e-05
1716  Epoch 6841/10000
1717   - 0s - loss: 6.5724e-04 - mean_absolute_error: 0.0152 -
      val_loss: 32.0215 - val_mean_absolute_error: 3.6074
1718  epoch_end_callback epoch 6840 lr 3.125e-05
1719  Epoch 6842/10000
1720   - 0s - loss: 6.5851e-04 - mean_absolute_error: 0.0143 -
      val_loss: 32.0133 - val_mean_absolute_error: 3.6051
1721  epoch_end_callback epoch 6841 lr 3.125e-05
1722  Epoch 6843/10000
1723   - 0s - loss: 6.0849e-04 - mean_absolute_error: 0.0135 -
      val_loss: 32.0405 - val_mean_absolute_error: 3.6062
1724  epoch_end_callback epoch 6842 lr 3.125e-05
1725  Epoch 6844/10000
1726   - 0s - loss: 6.1669e-04 - mean_absolute_error: 0.0141 -
      val_loss: 31.9777 - val_mean_absolute_error: 3.6017
1727  epoch_end_callback epoch 6843 lr 3.125e-05
1728  Epoch 6845/10000
1729   - 0s - loss: 6.2238e-04 - mean_absolute_error: 0.0137 -
      val_loss: 31.9870 - val_mean_absolute_error: 3.6043
1730  epoch_end_callback epoch 6844 lr 3.125e-05
1731  Epoch 6846/10000
1732   - 0s - loss: 6.8516e-04 - mean_absolute_error: 0.0148 -
      val_loss: 31.9848 - val_mean_absolute_error: 3.6028
1733  epoch_end_callback epoch 6845 lr 3.125e-05
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1734  Epoch 6847/10000
1735   - 0s - loss: 6.5864e-04 - mean_absolute_error: 0.0149 -
      val_loss: 32.0202 - val_mean_absolute_error: 3.6052
1736  epoch_end_callback epoch 6846 lr 3.125e-05
1737  Epoch 6848/10000
1738   - 0s - loss: 7.0942e-04 - mean_absolute_error: 0.0163 -
      val_loss: 31.9861 - val_mean_absolute_error: 3.6057
1739  epoch_end_callback epoch 6847 lr 3.125e-05
1740  Epoch 6849/10000
1741   - 0s - loss: 5.9670e-04 - mean_absolute_error: 0.0145 -
      val_loss: 32.0372 - val_mean_absolute_error: 3.6064
1742  epoch_end_callback epoch 6848 lr 3.125e-05
1743  Epoch 6850/10000
1744   - 0s - loss: 7.4508e-04 - mean_absolute_error: 0.0166 -
      val_loss: 32.0236 - val_mean_absolute_error: 3.6066
1745
1746  Epoch 06850: saving model to ./model/
      model_Epoch6850_val_mean_absolute_error3.607.h5
1747  epoch_end_callback epoch 6849 lr 3.125e-05
1748  Epoch 6851/10000
1749   - 0s - loss: 5.4969e-04 - mean_absolute_error: 0.0132 -
      val_loss: 32.0538 - val_mean_absolute_error: 3.6084
1750  epoch_end_callback epoch 6850 lr 3.125e-05
1751  Epoch 6852/10000
1752   - 0s - loss: 6.2119e-04 - mean_absolute_error: 0.0146 -
      val_loss: 32.0383 - val_mean_absolute_error: 3.6050
1753  epoch_end_callback epoch 6851 lr 3.125e-05
1754  Epoch 6853/10000
1755   - 0s - loss: 5.8881e-04 - mean_absolute_error: 0.0151 -
      val_loss: 32.0155 - val_mean_absolute_error: 3.6055
1756  epoch_end_callback epoch 6852 lr 3.125e-05
1757  Epoch 6854/10000
1758   - 0s - loss: 6.2816e-04 - mean_absolute_error: 0.0128 -
      val_loss: 32.0539 - val_mean_absolute_error: 3.6061
1759  epoch_end_callback epoch 6853 lr 3.125e-05
1760  Epoch 6855/10000
1761   - 0s - loss: 6.8752e-04 - mean_absolute_error: 0.0139 -
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1761  val_loss: 32.0408 - val_mean_absolute_error: 3.6070
1762  epoch_end_callback epoch 6854 lr 3.125e-05
1763  Epoch 6856/10000
1764   - 0s - loss: 6.5372e-04 - mean_absolute_error: 0.0147 -
      val_loss: 32.0639 - val_mean_absolute_error: 3.6087
1765  epoch_end_callback epoch 6855 lr 3.125e-05
1766  Epoch 6857/10000
1767   - 0s - loss: 5.1163e-04 - mean_absolute_error: 0.0132 -
      val_loss: 32.0399 - val_mean_absolute_error: 3.6067
1768  epoch_end_callback epoch 6856 lr 3.125e-05
1769  Epoch 6858/10000
1770   - 0s - loss: 5.8399e-04 - mean_absolute_error: 0.0145 -
      val_loss: 31.9997 - val_mean_absolute_error: 3.6040
1771  epoch_end_callback epoch 6857 lr 3.125e-05
1772  Epoch 6859/10000
1773   - 0s - loss: 6.4303e-04 - mean_absolute_error: 0.0142 -
      val_loss: 31.9660 - val_mean_absolute_error: 3.6052
1774  epoch_end_callback epoch 6858 lr 3.125e-05
1775  Epoch 6860/10000
1776   - 0s - loss: 5.7380e-04 - mean_absolute_error: 0.0136 -
      val_loss: 31.9866 - val_mean_absolute_error: 3.6053
1777
1778  Epoch 06860: saving model to ./model/
      model_Epoch6860_val_mean_absolute_error3.605.h5
1779  epoch_end_callback epoch 6859 lr 3.125e-05
1780  Epoch 6861/10000
1781   - 0s - loss: 6.5387e-04 - mean_absolute_error: 0.0158 -
      val_loss: 32.0092 - val_mean_absolute_error: 3.6032
1782  epoch_end_callback epoch 6860 lr 3.125e-05
1783  Epoch 6862/10000
1784   - 0s - loss: 6.2794e-04 - mean_absolute_error: 0.0132 -
      val_loss: 31.9867 - val_mean_absolute_error: 3.6033
1785  epoch_end_callback epoch 6861 lr 3.125e-05
1786  Epoch 6863/10000
1787   - 0s - loss: 7.1988e-04 - mean_absolute_error: 0.0149 -
      val_loss: 31.9968 - val_mean_absolute_error: 3.6057
1788  epoch_end_callback epoch 6862 lr 3.125e-05
```

1789 Epoch 6864/10000
1790 - 0s - loss: 6.4815e-04 - mean_absolute_error: 0.0144 - val_loss: 32.0242 - val_mean_absolute_error: 3.6093
1791 epoch_end_callback epoch 6863 lr 3.125e-05
1792 Epoch 6865/10000
1793 - 0s - loss: 6.2235e-04 - mean_absolute_error: 0.0139 - val_loss: 32.0512 - val_mean_absolute_error: 3.6052
1794 epoch_end_callback epoch 6864 lr 3.125e-05
1795 Epoch 6866/10000
1796 - 0s - loss: 5.9314e-04 - mean_absolute_error: 0.0132 - val_loss: 32.0859 - val_mean_absolute_error: 3.6087
1797 epoch_end_callback epoch 6865 lr 3.125e-05
1798 Epoch 6867/10000
1799 - 0s - loss: 6.0660e-04 - mean_absolute_error: 0.0131 - val_loss: 32.0810 - val_mean_absolute_error: 3.6087
1800 epoch_end_callback epoch 6866 lr 3.125e-05
1801 Epoch 6868/10000
1802 - 0s - loss: 5.6524e-04 - mean_absolute_error: 0.0143 - val_loss: 32.0304 - val_mean_absolute_error: 3.6056
1803 epoch_end_callback epoch 6867 lr 3.125e-05
1804 Epoch 6869/10000
1805 - 0s - loss: 6.1830e-04 - mean_absolute_error: 0.0141 - val_loss: 32.0524 - val_mean_absolute_error: 3.6098
1806 epoch_end_callback epoch 6868 lr 3.125e-05
1807 Epoch 6870/10000
1808 - 0s - loss: 5.6302e-04 - mean_absolute_error: 0.0141 - val_loss: 31.9858 - val_mean_absolute_error: 3.6030
1809
1810 Epoch 06870: saving model to ./model/ model_Epoch6870_val_mean_absolute_error3.603.h5
1811 epoch_end_callback epoch 6869 lr 3.125e-05
1812 Epoch 6871/10000
1813 - 0s - loss: 7.2782e-04 - mean_absolute_error: 0.0159 - val_loss: 32.0006 - val_mean_absolute_error: 3.6002
1814 epoch_end_callback epoch 6870 lr 3.125e-05
1815 Epoch 6872/10000
1816 - 0s - loss: 5.8627e-04 - mean_absolute_error: 0.0146 -

1816 val_loss: 32.0226 - val_mean_absolute_error: 3.6031

1817 epoch_end_callback epoch 6871 lr 3.125e-05

1818 Epoch 6873/10000

1819 - 0s - loss: 6.2694e-04 - mean_absolute_error: 0.0141 - val_loss: 32.0139 - val_mean_absolute_error: 3.6092

1820 epoch_end_callback epoch 6872 lr 3.125e-05

1821 Epoch 6874/10000

1822 - 0s - loss: 6.2234e-04 - mean_absolute_error: 0.0130 - val_loss: 32.0450 - val_mean_absolute_error: 3.6072

1823 epoch_end_callback epoch 6873 lr 3.125e-05

1824 Epoch 6875/10000

1825 - 0s - loss: 5.6054e-04 - mean_absolute_error: 0.0141 - val_loss: 32.0378 - val_mean_absolute_error: 3.6096

1826 epoch_end_callback epoch 6874 lr 3.125e-05

1827 Epoch 6876/10000

1828 - 0s - loss: 6.7766e-04 - mean_absolute_error: 0.0156 - val_loss: 32.0137 - val_mean_absolute_error: 3.6055

1829 epoch_end_callback epoch 6875 lr 3.125e-05

1830 Epoch 6877/10000

1831 - 0s - loss: 5.9672e-04 - mean_absolute_error: 0.0146 - val_loss: 32.0706 - val_mean_absolute_error: 3.6090

1832 epoch_end_callback epoch 6876 lr 3.125e-05

1833 Epoch 6878/10000

1834 - 0s - loss: 6.5026e-04 - mean_absolute_error: 0.0142 - val_loss: 32.0207 - val_mean_absolute_error: 3.6040

1835 epoch_end_callback epoch 6877 lr 3.125e-05

1836 Epoch 6879/10000

1837 - 0s - loss: 5.9668e-04 - mean_absolute_error: 0.0147 - val_loss: 31.9751 - val_mean_absolute_error: 3.6051

1838 epoch_end_callback epoch 6878 lr 3.125e-05

1839 Epoch 6880/10000

1840 - 0s - loss: 7.0934e-04 - mean_absolute_error: 0.0141 - val_loss: 32.0801 - val_mean_absolute_error: 3.6093

1841

1842 Epoch 06880: saving model to ./model/ model_Epoch6880_val_mean_absolute_error3.609.h5

1843 epoch_end_callback epoch 6879 lr 3.125e-05

```
1844  Epoch 6881/10000
1845   - 0s - loss: 6.0538e-04 - mean_absolute_error: 0.0149 - val_loss: 32.0172 - val_mean_absolute_error: 3.6053
1846  epoch_end_callback epoch 6880 lr 3.125e-05
1847  Epoch 6882/10000
1848   - 0s - loss: 6.4575e-04 - mean_absolute_error: 0.0138 - val_loss: 32.0289 - val_mean_absolute_error: 3.6040
1849  epoch_end_callback epoch 6881 lr 3.125e-05
1850  Epoch 6883/10000
1851   - 0s - loss: 5.7746e-04 - mean_absolute_error: 0.0141 - val_loss: 31.9842 - val_mean_absolute_error: 3.6089
1852  epoch_end_callback epoch 6882 lr 3.125e-05
1853  Epoch 6884/10000
1854   - 0s - loss: 6.4693e-04 - mean_absolute_error: 0.0144 - val_loss: 32.0616 - val_mean_absolute_error: 3.6068
1855  epoch_end_callback epoch 6883 lr 3.125e-05
1856  Epoch 6885/10000
1857   - 0s - loss: 6.0550e-04 - mean_absolute_error: 0.0145 - val_loss: 32.0621 - val_mean_absolute_error: 3.6098
1858  epoch_end_callback epoch 6884 lr 3.125e-05
1859  Epoch 6886/10000
1860   - 0s - loss: 6.2770e-04 - mean_absolute_error: 0.0139 - val_loss: 32.0385 - val_mean_absolute_error: 3.6076
1861  epoch_end_callback epoch 6885 lr 3.125e-05
1862  Epoch 6887/10000
1863   - 0s - loss: 6.0808e-04 - mean_absolute_error: 0.0140 - val_loss: 32.0104 - val_mean_absolute_error: 3.6056
1864  epoch_end_callback epoch 6886 lr 3.125e-05
1865  Epoch 6888/10000
1866   - 0s - loss: 5.5186e-04 - mean_absolute_error: 0.0135 - val_loss: 32.0287 - val_mean_absolute_error: 3.6048
1867  epoch_end_callback epoch 6887 lr 3.125e-05
1868  Epoch 6889/10000
1869   - 0s - loss: 6.3726e-04 - mean_absolute_error: 0.0141 - val_loss: 32.0174 - val_mean_absolute_error: 3.6062
1870  epoch_end_callback epoch 6888 lr 3.125e-05
1871  Epoch 6890/10000
```

1872   - 0s - loss: 6.8901e-04 - mean_absolute_error: 0.0160 - val_loss: 32.0413 - val_mean_absolute_error: 3.6103

1873

1874 Epoch 06890: saving model to ./model/model_Epoch6890_val_mean_absolute_error3.610.h5

1875 epoch_end_callback epoch 6889 lr 3.125e-05

1876 Epoch 6891/10000

1877   - 0s - loss: 5.3851e-04 - mean_absolute_error: 0.0130 - val_loss: 32.0045 - val_mean_absolute_error: 3.6069

1878 epoch_end_callback epoch 6890 lr 3.125e-05

1879 Epoch 6892/10000

1880   - 0s - loss: 6.2166e-04 - mean_absolute_error: 0.0156 - val_loss: 31.9823 - val_mean_absolute_error: 3.6037

1881 epoch_end_callback epoch 6891 lr 3.125e-05

1882 Epoch 6893/10000

1883   - 0s - loss: 6.3092e-04 - mean_absolute_error: 0.0144 - val_loss: 32.0138 - val_mean_absolute_error: 3.6049

1884 epoch_end_callback epoch 6892 lr 3.125e-05

1885 Epoch 6894/10000

1886   - 0s - loss: 6.1383e-04 - mean_absolute_error: 0.0137 - val_loss: 32.0417 - val_mean_absolute_error: 3.6046

1887 epoch_end_callback epoch 6893 lr 3.125e-05

1888 Epoch 6895/10000

1889   - 0s - loss: 6.8508e-04 - mean_absolute_error: 0.0160 - val_loss: 32.0444 - val_mean_absolute_error: 3.6060

1890 epoch_end_callback epoch 6894 lr 3.125e-05

1891 Epoch 6896/10000

1892   - 0s - loss: 5.7989e-04 - mean_absolute_error: 0.0133 - val_loss: 31.9807 - val_mean_absolute_error: 3.6053

1893 epoch_end_callback epoch 6895 lr 3.125e-05

1894 Epoch 6897/10000

1895   - 0s - loss: 7.1736e-04 - mean_absolute_error: 0.0149 - val_loss: 32.0117 - val_mean_absolute_error: 3.6039

1896 epoch_end_callback epoch 6896 lr 3.125e-05

1897 Epoch 6898/10000

1898   - 0s - loss: 5.8242e-04 - mean_absolute_error: 0.0131 - val_loss: 32.0188 - val_mean_absolute_error: 3.6057

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1899  epoch_end_callback epoch 6897 lr 3.125e-05
1900  Epoch 6899/10000
1901   - 0s - loss: 6.5103e-04 - mean_absolute_error: 0.0135 -
      val_loss: 32.0228 - val_mean_absolute_error: 3.6059
1902  epoch_end_callback epoch 6898 lr 3.125e-05
1903  Epoch 6900/10000
1904   - 0s - loss: 5.3668e-04 - mean_absolute_error: 0.0143 -
      val_loss: 32.0207 - val_mean_absolute_error: 3.6053
1905
1906  Epoch 06900: saving model to ./model/
      model_Epoch6900_val_mean_absolute_error3.605.h5
1907  epoch_end_callback epoch 6899 lr 3.125e-05
1908  Epoch 6901/10000
1909   - 0s - loss: 5.5199e-04 - mean_absolute_error: 0.0140 -
      val_loss: 32.0228 - val_mean_absolute_error: 3.6051
1910  epoch_end_callback epoch 6900 lr 3.125e-05
1911  Epoch 6902/10000
1912   - 0s - loss: 7.5620e-04 - mean_absolute_error: 0.0150 -
      val_loss: 32.0160 - val_mean_absolute_error: 3.6035
1913  epoch_end_callback epoch 6901 lr 3.125e-05
1914  Epoch 6903/10000
1915   - 0s - loss: 6.5170e-04 - mean_absolute_error: 0.0142 -
      val_loss: 31.9826 - val_mean_absolute_error: 3.6040
1916  epoch_end_callback epoch 6902 lr 3.125e-05
1917  Epoch 6904/10000
1918   - 0s - loss: 6.8282e-04 - mean_absolute_error: 0.0146 -
      val_loss: 32.0062 - val_mean_absolute_error: 3.6047
1919  epoch_end_callback epoch 6903 lr 3.125e-05
1920  Epoch 6905/10000
1921   - 0s - loss: 5.8978e-04 - mean_absolute_error: 0.0140 -
      val_loss: 32.0498 - val_mean_absolute_error: 3.6081
1922  epoch_end_callback epoch 6904 lr 3.125e-05
1923  Epoch 6906/10000
1924   - 0s - loss: 6.4444e-04 - mean_absolute_error: 0.0138 -
      val_loss: 32.0897 - val_mean_absolute_error: 3.6071
1925  epoch_end_callback epoch 6905 lr 3.125e-05
1926  Epoch 6907/10000
```

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1927    - 0s - loss: 5.7229e-04 - mean_absolute_error: 0.0147 -
        val_loss: 32.0081 - val_mean_absolute_error: 3.6043
1928  epoch_end_callback epoch 6906 lr 3.125e-05
1929  Epoch 6908/10000
1930    - 0s - loss: 5.9779e-04 - mean_absolute_error: 0.0133 -
        val_loss: 32.0000 - val_mean_absolute_error: 3.6024
1931  epoch_end_callback epoch 6907 lr 3.125e-05
1932  Epoch 6909/10000
1933    - 0s - loss: 7.2161e-04 - mean_absolute_error: 0.0158 -
        val_loss: 32.0317 - val_mean_absolute_error: 3.6044
1934  epoch_end_callback epoch 6908 lr 3.125e-05
1935  Epoch 6910/10000
1936    - 0s - loss: 5.8757e-04 - mean_absolute_error: 0.0144 -
        val_loss: 32.0147 - val_mean_absolute_error: 3.6038
1937
1938  Epoch 06910: saving model to ./model/
        model_Epoch6910_val_mean_absolute_error3.604.h5
1939  epoch_end_callback epoch 6909 lr 3.125e-05
1940  Epoch 6911/10000
1941    - 0s - loss: 5.3524e-04 - mean_absolute_error: 0.0136 -
        val_loss: 32.0158 - val_mean_absolute_error: 3.6039
1942  epoch_end_callback epoch 6910 lr 3.125e-05
1943  Epoch 6912/10000
1944    - 0s - loss: 6.4901e-04 - mean_absolute_error: 0.0154 -
        val_loss: 32.0264 - val_mean_absolute_error: 3.6056
1945  epoch_end_callback epoch 6911 lr 3.125e-05
1946  Epoch 6913/10000
1947    - 0s - loss: 5.0804e-04 - mean_absolute_error: 0.0138 -
        val_loss: 32.0495 - val_mean_absolute_error: 3.6049
1948  epoch_end_callback epoch 6912 lr 3.125e-05
1949  Epoch 6914/10000
1950    - 0s - loss: 5.9192e-04 - mean_absolute_error: 0.0147 -
        val_loss: 32.0527 - val_mean_absolute_error: 3.6067
1951  epoch_end_callback epoch 6913 lr 3.125e-05
1952  Epoch 6915/10000
1953    - 0s - loss: 6.2162e-04 - mean_absolute_error: 0.0144 -
        val_loss: 32.0550 - val_mean_absolute_error: 3.6086
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1954 epoch_end_callback epoch 6914 lr 3.125e-05
1955 Epoch 6916/10000
1956  - 0s - loss: 6.0333e-04 - mean_absolute_error: 0.0138 -
     val_loss: 32.0459 - val_mean_absolute_error: 3.6076
1957 epoch_end_callback epoch 6915 lr 3.125e-05
1958 Epoch 6917/10000
1959  - 0s - loss: 7.1421e-04 - mean_absolute_error: 0.0161 -
     val_loss: 32.0123 - val_mean_absolute_error: 3.6038
1960 epoch_end_callback epoch 6916 lr 3.125e-05
1961 Epoch 6918/10000
1962  - 0s - loss: 5.7805e-04 - mean_absolute_error: 0.0131 -
     val_loss: 32.0796 - val_mean_absolute_error: 3.6095
1963 epoch_end_callback epoch 6917 lr 3.125e-05
1964 Epoch 6919/10000
1965  - 0s - loss: 5.9197e-04 - mean_absolute_error: 0.0145 -
     val_loss: 32.0200 - val_mean_absolute_error: 3.6035
1966 epoch_end_callback epoch 6918 lr 3.125e-05
1967 Epoch 6920/10000
1968  - 0s - loss: 5.5766e-04 - mean_absolute_error: 0.0133 -
     val_loss: 32.0317 - val_mean_absolute_error: 3.6094
1969
1970 Epoch 06920: saving model to ./model/
     model_Epoch6920_val_mean_absolute_error3.609.h5
1971 epoch_end_callback epoch 6919 lr 3.125e-05
1972 Epoch 6921/10000
1973  - 0s - loss: 7.1968e-04 - mean_absolute_error: 0.0164 -
     val_loss: 32.0636 - val_mean_absolute_error: 3.6055
1974 epoch_end_callback epoch 6920 lr 3.125e-05
1975 Epoch 6922/10000
1976  - 0s - loss: 5.7430e-04 - mean_absolute_error: 0.0138 -
     val_loss: 32.0951 - val_mean_absolute_error: 3.6068
1977 epoch_end_callback epoch 6921 lr 3.125e-05
1978 Epoch 6923/10000
1979  - 0s - loss: 5.6392e-04 - mean_absolute_error: 0.0130 -
     val_loss: 32.1483 - val_mean_absolute_error: 3.6125
1980 epoch_end_callback epoch 6922 lr 3.125e-05
1981 Epoch 6924/10000
```

1982   - 0s - loss: 6.3279e-04 - mean_absolute_error: 0.0124 - val_loss: 32.0378 - val_mean_absolute_error: 3.6050

1983   epoch_end_callback epoch 6923 lr 3.125e-05

1984   Epoch 6925/10000

1985   - 0s - loss: 6.2254e-04 - mean_absolute_error: 0.0144 - val_loss: 32.0051 - val_mean_absolute_error: 3.6054

1986   epoch_end_callback epoch 6924 lr 3.125e-05

1987   Epoch 6926/10000

1988   - 0s - loss: 6.4245e-04 - mean_absolute_error: 0.0144 - val_loss: 32.0588 - val_mean_absolute_error: 3.6061

1989   epoch_end_callback epoch 6925 lr 3.125e-05

1990   Epoch 6927/10000

1991   - 0s - loss: 6.2033e-04 - mean_absolute_error: 0.0132 - val_loss: 32.0081 - val_mean_absolute_error: 3.6050

1992   epoch_end_callback epoch 6926 lr 3.125e-05

1993   Epoch 6928/10000

1994   - 0s - loss: 5.4232e-04 - mean_absolute_error: 0.0124 - val_loss: 32.0304 - val_mean_absolute_error: 3.6053

1995   epoch_end_callback epoch 6927 lr 3.125e-05

1996   Epoch 6929/10000

1997   - 0s - loss: 7.1505e-04 - mean_absolute_error: 0.0160 - val_loss: 32.0277 - val_mean_absolute_error: 3.6016

1998   epoch_end_callback epoch 6928 lr 3.125e-05

1999   Epoch 6930/10000

2000   - 0s - loss: 6.3735e-04 - mean_absolute_error: 0.0138 - val_loss: 32.0937 - val_mean_absolute_error: 3.6057

2001

2002   Epoch 06930: saving model to ./model/model_Epoch6930_val_mean_absolute_error3.606.h5

2003   epoch_end_callback epoch 6929 lr 3.125e-05

2004   Epoch 6931/10000

2005   - 0s - loss: 8.0882e-04 - mean_absolute_error: 0.0161 - val_loss: 32.0453 - val_mean_absolute_error: 3.6043

2006   epoch_end_callback epoch 6930 lr 3.125e-05

2007   Epoch 6932/10000

2008   - 0s - loss: 5.7254e-04 - mean_absolute_error: 0.0127 - val_loss: 31.9887 - val_mean_absolute_error: 3.6037

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2009 epoch_end_callback epoch 6931 lr 3.125e-05
2010 Epoch 6933/10000
2011  - 0s - loss: 5.7890e-04 - mean_absolute_error: 0.0135 -
     val_loss: 31.9996 - val_mean_absolute_error: 3.6042
2012 epoch_end_callback epoch 6932 lr 3.125e-05
2013 Epoch 6934/10000
2014  - 0s - loss: 6.1714e-04 - mean_absolute_error: 0.0159 -
     val_loss: 32.0327 - val_mean_absolute_error: 3.6080
2015 epoch_end_callback epoch 6933 lr 3.125e-05
2016 Epoch 6935/10000
2017  - 0s - loss: 6.6256e-04 - mean_absolute_error: 0.0146 -
     val_loss: 32.1067 - val_mean_absolute_error: 3.6072
2018 epoch_end_callback epoch 6934 lr 3.125e-05
2019 Epoch 6936/10000
2020  - 0s - loss: 6.1162e-04 - mean_absolute_error: 0.0147 -
     val_loss: 32.0839 - val_mean_absolute_error: 3.6075
2021 epoch_end_callback epoch 6935 lr 3.125e-05
2022 Epoch 6937/10000
2023  - 0s - loss: 6.1241e-04 - mean_absolute_error: 0.0148 -
     val_loss: 32.0659 - val_mean_absolute_error: 3.6066
2024 epoch_end_callback epoch 6936 lr 3.125e-05
2025 Epoch 6938/10000
2026  - 0s - loss: 5.9990e-04 - mean_absolute_error: 0.0145 -
     val_loss: 31.9823 - val_mean_absolute_error: 3.6032
2027 epoch_end_callback epoch 6937 lr 3.125e-05
2028 Epoch 6939/10000
2029  - 0s - loss: 5.7981e-04 - mean_absolute_error: 0.0140 -
     val_loss: 32.0615 - val_mean_absolute_error: 3.6105
2030 epoch_end_callback epoch 6938 lr 3.125e-05
2031 Epoch 6940/10000
2032  - 0s - loss: 5.8044e-04 - mean_absolute_error: 0.0150 -
     val_loss: 32.0932 - val_mean_absolute_error: 3.6093
2033
2034 Epoch 06940: saving model to ./model/
     model_Epoch6940_val_mean_absolute_error3.609.h5
2035 epoch_end_callback epoch 6939 lr 3.125e-05
2036 Epoch 6941/10000
```

```
2037    - 0s - loss: 6.2379e-04 - mean_absolute_error: 0.0142 -
        val_loss: 32.0764 - val_mean_absolute_error: 3.6068
2038   epoch_end_callback epoch 6940 lr 3.125e-05
2039   Epoch 6942/10000
2040    - 0s - loss: 6.7190e-04 - mean_absolute_error: 0.0131 -
        val_loss: 32.0721 - val_mean_absolute_error: 3.6041
2041   epoch_end_callback epoch 6941 lr 3.125e-05
2042   Epoch 6943/10000
2043    - 0s - loss: 6.6778e-04 - mean_absolute_error: 0.0141 -
        val_loss: 31.9902 - val_mean_absolute_error: 3.6048
2044   epoch_end_callback epoch 6942 lr 3.125e-05
2045   Epoch 6944/10000
2046    - 0s - loss: 5.1993e-04 - mean_absolute_error: 0.0133 -
        val_loss: 32.0103 - val_mean_absolute_error: 3.6073
2047   epoch_end_callback epoch 6943 lr 3.125e-05
2048   Epoch 6945/10000
2049    - 0s - loss: 4.8254e-04 - mean_absolute_error: 0.0133 -
        val_loss: 32.0360 - val_mean_absolute_error: 3.6047
2050   epoch_end_callback epoch 6944 lr 3.125e-05
2051   Epoch 6946/10000
2052    - 0s - loss: 8.1671e-04 - mean_absolute_error: 0.0183 -
        val_loss: 32.0252 - val_mean_absolute_error: 3.6046
2053   epoch_end_callback epoch 6945 lr 3.125e-05
2054   Epoch 6947/10000
2055    - 0s - loss: 5.4873e-04 - mean_absolute_error: 0.0128 -
        val_loss: 32.0401 - val_mean_absolute_error: 3.6062
2056   epoch_end_callback epoch 6946 lr 3.125e-05
2057   Epoch 6948/10000
2058    - 0s - loss: 5.6492e-04 - mean_absolute_error: 0.0136 -
        val_loss: 32.0383 - val_mean_absolute_error: 3.6031
2059   epoch_end_callback epoch 6947 lr 3.125e-05
2060   Epoch 6949/10000
2061    - 0s - loss: 6.8245e-04 - mean_absolute_error: 0.0159 -
        val_loss: 32.0046 - val_mean_absolute_error: 3.6056
2062   epoch_end_callback epoch 6948 lr 3.125e-05
2063   Epoch 6950/10000
2064    - 0s - loss: 5.5932e-04 - mean_absolute_error: 0.0138 -
```

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2064  val_loss: 32.0014 - val_mean_absolute_error: 3.6042
2065
2066  Epoch 06950: saving model to ./model/
      model_Epoch6950_val_mean_absolute_error3.604.h5
2067  epoch_end_callback epoch 6949 lr 3.125e-05
2068  Epoch 6951/10000
2069   - 0s - loss: 6.3815e-04 - mean_absolute_error: 0.0154 -
      val_loss: 32.0233 - val_mean_absolute_error: 3.6068
2070  epoch_end_callback epoch 6950 lr 3.125e-05
2071  Epoch 6952/10000
2072   - 0s - loss: 6.0202e-04 - mean_absolute_error: 0.0144 -
      val_loss: 31.9669 - val_mean_absolute_error: 3.6008
2073  epoch_end_callback epoch 6951 lr 3.125e-05
2074  Epoch 6953/10000
2075   - 0s - loss: 6.0689e-04 - mean_absolute_error: 0.0146 -
      val_loss: 32.0371 - val_mean_absolute_error: 3.6082
2076  epoch_end_callback epoch 6952 lr 3.125e-05
2077  Epoch 6954/10000
2078   - 0s - loss: 6.0574e-04 - mean_absolute_error: 0.0139 -
      val_loss: 31.9994 - val_mean_absolute_error: 3.6047
2079  epoch_end_callback epoch 6953 lr 3.125e-05
2080  Epoch 6955/10000
2081   - 0s - loss: 5.6807e-04 - mean_absolute_error: 0.0135 -
      val_loss: 32.1080 - val_mean_absolute_error: 3.6097
2082  epoch_end_callback epoch 6954 lr 3.125e-05
2083  Epoch 6956/10000
2084   - 0s - loss: 6.0470e-04 - mean_absolute_error: 0.0145 -
      val_loss: 32.0309 - val_mean_absolute_error: 3.6066
2085  epoch_end_callback epoch 6955 lr 3.125e-05
2086  Epoch 6957/10000
2087   - 0s - loss: 6.7331e-04 - mean_absolute_error: 0.0155 -
      val_loss: 32.0287 - val_mean_absolute_error: 3.6063
2088  epoch_end_callback epoch 6956 lr 3.125e-05
2089  Epoch 6958/10000
2090   - 0s - loss: 6.0527e-04 - mean_absolute_error: 0.0138 -
      val_loss: 31.9901 - val_mean_absolute_error: 3.6072
2091  epoch_end_callback epoch 6957 lr 3.125e-05
```

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2092  Epoch 6959/10000
2093   - 0s - loss: 6.5336e-04 - mean_absolute_error: 0.0156 -
      val_loss: 32.1536 - val_mean_absolute_error: 3.6098
2094  epoch_end_callback epoch 6958 lr 3.125e-05
2095  Epoch 6960/10000
2096   - 0s - loss: 6.5146e-04 - mean_absolute_error: 0.0132 -
      val_loss: 32.0437 - val_mean_absolute_error: 3.6061
2097
2098  Epoch 06960: saving model to ./model/
      model_Epoch6960_val_mean_absolute_error3.606.h5
2099  epoch_end_callback epoch 6959 lr 3.125e-05
2100  Epoch 6961/10000
2101   - 0s - loss: 6.3402e-04 - mean_absolute_error: 0.0148 -
      val_loss: 32.0690 - val_mean_absolute_error: 3.6094
2102  epoch_end_callback epoch 6960 lr 3.125e-05
2103  Epoch 6962/10000
2104   - 0s - loss: 6.5268e-04 - mean_absolute_error: 0.0145 -
      val_loss: 31.9752 - val_mean_absolute_error: 3.6036
2105  epoch_end_callback epoch 6961 lr 3.125e-05
2106  Epoch 6963/10000
2107   - 0s - loss: 6.7502e-04 - mean_absolute_error: 0.0157 -
      val_loss: 32.0221 - val_mean_absolute_error: 3.6078
2108  epoch_end_callback epoch 6962 lr 3.125e-05
2109  Epoch 6964/10000
2110   - 0s - loss: 5.5334e-04 - mean_absolute_error: 0.0137 -
      val_loss: 32.0200 - val_mean_absolute_error: 3.6031
2111  epoch_end_callback epoch 6963 lr 3.125e-05
2112  Epoch 6965/10000
2113   - 0s - loss: 6.0603e-04 - mean_absolute_error: 0.0143 -
      val_loss: 32.0475 - val_mean_absolute_error: 3.6074
2114  epoch_end_callback epoch 6964 lr 3.125e-05
2115  Epoch 6966/10000
2116   - 0s - loss: 6.3056e-04 - mean_absolute_error: 0.0143 -
      val_loss: 32.0704 - val_mean_absolute_error: 3.6086
2117  epoch_end_callback epoch 6965 lr 3.125e-05
2118  Epoch 6967/10000
2119   - 0s - loss: 5.3219e-04 - mean_absolute_error: 0.0132 -
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2119  val_loss: 32.0653 - val_mean_absolute_error: 3.6053
2120  epoch_end_callback epoch 6966 lr 3.125e-05
2121  Epoch 6968/10000
2122   - 0s - loss: 6.7020e-04 - mean_absolute_error: 0.0151 -
      val_loss: 32.0438 - val_mean_absolute_error: 3.6062
2123  epoch_end_callback epoch 6967 lr 3.125e-05
2124  Epoch 6969/10000
2125   - 0s - loss: 5.6787e-04 - mean_absolute_error: 0.0129 -
      val_loss: 32.0330 - val_mean_absolute_error: 3.6069
2126  epoch_end_callback epoch 6968 lr 3.125e-05
2127  Epoch 6970/10000
2128   - 0s - loss: 6.8593e-04 - mean_absolute_error: 0.0147 -
      val_loss: 32.0493 - val_mean_absolute_error: 3.6080
2129
2130  Epoch 06970: saving model to ./model/
      model_Epoch6970_val_mean_absolute_error3.608.h5
2131  epoch_end_callback epoch 6969 lr 3.125e-05
2132  Epoch 6971/10000
2133   - 0s - loss: 6.1065e-04 - mean_absolute_error: 0.0136 -
      val_loss: 32.0274 - val_mean_absolute_error: 3.6085
2134  epoch_end_callback epoch 6970 lr 3.125e-05
2135  Epoch 6972/10000
2136   - 0s - loss: 6.3548e-04 - mean_absolute_error: 0.0156 -
      val_loss: 32.0843 - val_mean_absolute_error: 3.6078
2137  epoch_end_callback epoch 6971 lr 3.125e-05
2138  Epoch 6973/10000
2139   - 0s - loss: 5.6794e-04 - mean_absolute_error: 0.0136 -
      val_loss: 32.0665 - val_mean_absolute_error: 3.6114
2140  epoch_end_callback epoch 6972 lr 3.125e-05
2141  Epoch 6974/10000
2142   - 0s - loss: 5.5446e-04 - mean_absolute_error: 0.0141 -
      val_loss: 32.0796 - val_mean_absolute_error: 3.6076
2143  epoch_end_callback epoch 6973 lr 3.125e-05
2144  Epoch 6975/10000
2145   - 0s - loss: 6.0056e-04 - mean_absolute_error: 0.0148 -
      val_loss: 32.0426 - val_mean_absolute_error: 3.6089
2146  epoch_end_callback epoch 6974 lr 3.125e-05
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2147  Epoch 6976/10000
2148   - 0s - loss: 6.4095e-04 - mean_absolute_error: 0.0156 -
       val_loss: 32.0195 - val_mean_absolute_error: 3.6076
2149  epoch_end_callback epoch 6975 lr 3.125e-05
2150  Epoch 6977/10000
2151   - 0s - loss: 6.1438e-04 - mean_absolute_error: 0.0139 -
       val_loss: 32.1048 - val_mean_absolute_error: 3.6096
2152  epoch_end_callback epoch 6976 lr 3.125e-05
2153  Epoch 6978/10000
2154   - 0s - loss: 5.5395e-04 - mean_absolute_error: 0.0136 -
       val_loss: 32.0677 - val_mean_absolute_error: 3.6098
2155  epoch_end_callback epoch 6977 lr 3.125e-05
2156  Epoch 6979/10000
2157   - 0s - loss: 5.2903e-04 - mean_absolute_error: 0.0118 -
       val_loss: 32.0842 - val_mean_absolute_error: 3.6072
2158  epoch_end_callback epoch 6978 lr 3.125e-05
2159  Epoch 6980/10000
2160   - 0s - loss: 6.4259e-04 - mean_absolute_error: 0.0149 -
       val_loss: 31.9748 - val_mean_absolute_error: 3.6036
2161
2162  Epoch 06980: saving model to ./model/
       model_Epoch6980_val_mean_absolute_error3.604.h5
2163  epoch_end_callback epoch 6979 lr 3.125e-05
2164  Epoch 6981/10000
2165   - 0s - loss: 6.1158e-04 - mean_absolute_error: 0.0145 -
       val_loss: 32.0147 - val_mean_absolute_error: 3.6062
2166  epoch_end_callback epoch 6980 lr 3.125e-05
2167  Epoch 6982/10000
2168   - 0s - loss: 6.3307e-04 - mean_absolute_error: 0.0137 -
       val_loss: 32.0454 - val_mean_absolute_error: 3.6037
2169  epoch_end_callback epoch 6981 lr 3.125e-05
2170  Epoch 6983/10000
2171   - 0s - loss: 6.4339e-04 - mean_absolute_error: 0.0150 -
       val_loss: 32.0544 - val_mean_absolute_error: 3.6090
2172  epoch_end_callback epoch 6982 lr 3.125e-05
2173  Epoch 6984/10000
2174   - 0s - loss: 6.2872e-04 - mean_absolute_error: 0.0130 -
```

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2174  val_loss: 32.0542 - val_mean_absolute_error: 3.6089
2175  epoch_end_callback epoch 6983 lr 3.125e-05
2176  Epoch 6985/10000
2177   - 0s - loss: 5.9119e-04 - mean_absolute_error: 0.0144 -
      val_loss: 32.0437 - val_mean_absolute_error: 3.6130
2178  epoch_end_callback epoch 6984 lr 3.125e-05
2179  Epoch 6986/10000
2180   - 0s - loss: 6.5506e-04 - mean_absolute_error: 0.0149 -
      val_loss: 32.0658 - val_mean_absolute_error: 3.6072
2181  epoch_end_callback epoch 6985 lr 3.125e-05
2182  Epoch 6987/10000
2183   - 0s - loss: 5.6237e-04 - mean_absolute_error: 0.0134 -
      val_loss: 31.9989 - val_mean_absolute_error: 3.6040
2184  epoch_end_callback epoch 6986 lr 3.125e-05
2185  Epoch 6988/10000
2186   - 0s - loss: 7.0367e-04 - mean_absolute_error: 0.0162 -
      val_loss: 32.0245 - val_mean_absolute_error: 3.6045
2187  epoch_end_callback epoch 6987 lr 3.125e-05
2188  Epoch 6989/10000
2189   - 0s - loss: 5.2186e-04 - mean_absolute_error: 0.0132 -
      val_loss: 32.0548 - val_mean_absolute_error: 3.6081
2190  epoch_end_callback epoch 6988 lr 3.125e-05
2191  Epoch 6990/10000
2192   - 0s - loss: 6.9740e-04 - mean_absolute_error: 0.0150 -
      val_loss: 32.0317 - val_mean_absolute_error: 3.6058
2193
2194  Epoch 06990: saving model to ./model/
      model_Epoch6990_val_mean_absolute_error3.606.h5
2195  epoch_end_callback epoch 6989 lr 3.125e-05
2196  Epoch 6991/10000
2197   - 0s - loss: 5.5843e-04 - mean_absolute_error: 0.0142 -
      val_loss: 32.0146 - val_mean_absolute_error: 3.6038
2198  epoch_end_callback epoch 6990 lr 3.125e-05
2199  Epoch 6992/10000
2200   - 0s - loss: 5.2256e-04 - mean_absolute_error: 0.0140 -
      val_loss: 32.0120 - val_mean_absolute_error: 3.6085
2201  epoch_end_callback epoch 6991 lr 3.125e-05
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2202  Epoch 6993/10000
2203   - 0s - loss: 6.1503e-04 - mean_absolute_error: 0.0145 -
       val_loss: 32.0495 - val_mean_absolute_error: 3.6090
2204  epoch_end_callback epoch 6992 lr 3.125e-05
2205  Epoch 6994/10000
2206   - 0s - loss: 6.1351e-04 - mean_absolute_error: 0.0154 -
       val_loss: 32.0049 - val_mean_absolute_error: 3.6069
2207  epoch_end_callback epoch 6993 lr 3.125e-05
2208  Epoch 6995/10000
2209   - 0s - loss: 5.4050e-04 - mean_absolute_error: 0.0147 -
       val_loss: 32.0489 - val_mean_absolute_error: 3.6070
2210  epoch_end_callback epoch 6994 lr 3.125e-05
2211  Epoch 6996/10000
2212   - 0s - loss: 5.4697e-04 - mean_absolute_error: 0.0130 -
       val_loss: 31.9691 - val_mean_absolute_error: 3.6036
2213  epoch_end_callback epoch 6995 lr 3.125e-05
2214  Epoch 6997/10000
2215   - 0s - loss: 6.2101e-04 - mean_absolute_error: 0.0132 -
       val_loss: 32.0168 - val_mean_absolute_error: 3.6042
2216  epoch_end_callback epoch 6996 lr 3.125e-05
2217  Epoch 6998/10000
2218   - 0s - loss: 4.4264e-04 - mean_absolute_error: 0.0131 -
       val_loss: 32.0509 - val_mean_absolute_error: 3.6059
2219  epoch_end_callback epoch 6997 lr 3.125e-05
2220  Epoch 6999/10000
2221   - 0s - loss: 6.7342e-04 - mean_absolute_error: 0.0169 -
       val_loss: 32.0582 - val_mean_absolute_error: 3.6102
2222  epoch_end_callback epoch 6998 lr 3.125e-05
2223  Epoch 7000/10000
2224   - 0s - loss: 5.4493e-04 - mean_absolute_error: 0.0131 -
       val_loss: 32.0262 - val_mean_absolute_error: 3.6088
2225
2226  Epoch 07000: saving model to ./model/
       model_Epoch7000_val_mean_absolute_error3.609.h5
2227  epoch_end_callback epoch 6999 lr 3.125e-05
2228  Epoch 7001/10000
2229   - 0s - loss: 6.6332e-04 - mean_absolute_error: 0.0151 -
```

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2229  val_loss: 32.0271 - val_mean_absolute_error: 3.6046
2230  epoch_end_callback epoch 7000 lr 3.125e-05
2231  Epoch 7002/10000
2232   - 0s - loss: 5.4477e-04 - mean_absolute_error: 0.0125 -
      val_loss: 31.9953 - val_mean_absolute_error: 3.6011
2233  epoch_end_callback epoch 7001 lr 3.125e-05
2234  Epoch 7003/10000
2235   - 0s - loss: 6.5269e-04 - mean_absolute_error: 0.0150 -
      val_loss: 32.0082 - val_mean_absolute_error: 3.6067
2236  epoch_end_callback epoch 7002 lr 3.125e-05
2237  Epoch 7004/10000
2238   - 0s - loss: 5.9042e-04 - mean_absolute_error: 0.0136 -
      val_loss: 32.0311 - val_mean_absolute_error: 3.6074
2239  epoch_end_callback epoch 7003 lr 3.125e-05
2240  Epoch 7005/10000
2241   - 0s - loss: 6.6883e-04 - mean_absolute_error: 0.0151 -
      val_loss: 31.9925 - val_mean_absolute_error: 3.6080
2242  epoch_end_callback epoch 7004 lr 3.125e-05
2243  Epoch 7006/10000
2244   - 0s - loss: 5.6730e-04 - mean_absolute_error: 0.0136 -
      val_loss: 32.0631 - val_mean_absolute_error: 3.6101
2245  epoch_end_callback epoch 7005 lr 3.125e-05
2246  Epoch 7007/10000
2247   - 0s - loss: 6.7983e-04 - mean_absolute_error: 0.0145 -
      val_loss: 32.0499 - val_mean_absolute_error: 3.6045
2248  epoch_end_callback epoch 7006 lr 3.125e-05
2249  Epoch 7008/10000
2250   - 0s - loss: 5.9105e-04 - mean_absolute_error: 0.0141 -
      val_loss: 32.0418 - val_mean_absolute_error: 3.6055
2251  epoch_end_callback epoch 7007 lr 3.125e-05
2252  Epoch 7009/10000
2253   - 0s - loss: 5.8570e-04 - mean_absolute_error: 0.0142 -
      val_loss: 31.9837 - val_mean_absolute_error: 3.6046
2254  epoch_end_callback epoch 7008 lr 3.125e-05
2255  Epoch 7010/10000
2256   - 0s - loss: 6.8832e-04 - mean_absolute_error: 0.0153 -
      val_loss: 32.0138 - val_mean_absolute_error: 3.6059
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2257

2258 Epoch 07010: saving model to ./model/
model_Epoch7010_val_mean_absolute_error3.606.h5

2259 epoch_end_callback epoch 7009 lr 3.125e-05

2260 Epoch 7011/10000

2261 - 0s - loss: 5.8930e-04 - mean_absolute_error: 0.0139 -
val_loss: 32.0596 - val_mean_absolute_error: 3.6076

2262 epoch_end_callback epoch 7010 lr 3.125e-05

2263 Epoch 7012/10000

2264 - 0s - loss: 6.7190e-04 - mean_absolute_error: 0.0147 -
val_loss: 32.0239 - val_mean_absolute_error: 3.6085

2265 epoch_end_callback epoch 7011 lr 3.125e-05

2266 Epoch 7013/10000

2267 - 0s - loss: 5.2644e-04 - mean_absolute_error: 0.0138 -
val_loss: 32.0733 - val_mean_absolute_error: 3.6066

2268 epoch_end_callback epoch 7012 lr 3.125e-05

2269 Epoch 7014/10000

2270 - 0s - loss: 4.8735e-04 - mean_absolute_error: 0.0124 -
val_loss: 32.0457 - val_mean_absolute_error: 3.6110

2271 epoch_end_callback epoch 7013 lr 3.125e-05

2272 Epoch 7015/10000

2273 - 0s - loss: 6.1597e-04 - mean_absolute_error: 0.0134 -
val_loss: 32.0461 - val_mean_absolute_error: 3.6057

2274 epoch_end_callback epoch 7014 lr 3.125e-05

2275 Epoch 7016/10000

2276 - 0s - loss: 6.5348e-04 - mean_absolute_error: 0.0138 -
val_loss: 32.0361 - val_mean_absolute_error: 3.6062

2277 epoch_end_callback epoch 7015 lr 3.125e-05

2278 Epoch 7017/10000

2279 - 0s - loss: 7.0998e-04 - mean_absolute_error: 0.0141 -
val_loss: 32.0895 - val_mean_absolute_error: 3.6121

2280 epoch_end_callback epoch 7016 lr 3.125e-05

2281 Epoch 7018/10000

2282 - 0s - loss: 4.6277e-04 - mean_absolute_error: 0.0119 -
val_loss: 32.0984 - val_mean_absolute_error: 3.6097

2283 epoch_end_callback epoch 7017 lr 3.125e-05

2284 Epoch 7019/10000

2285   - 0s - loss: 6.6782e-04 - mean_absolute_error: 0.0163 - val_loss: 32.0883 - val_mean_absolute_error: 3.6064

2286 epoch_end_callback epoch 7018 lr 3.125e-05

2287 Epoch 7020/10000

2288   - 0s - loss: 4.8954e-04 - mean_absolute_error: 0.0124 - val_loss: 32.0222 - val_mean_absolute_error: 3.6069

2289

2290 Epoch 07020: saving model to ./model/model_Epoch7020_val_mean_absolute_error3.607.h5

2291 epoch_end_callback epoch 7019 lr 3.125e-05

2292 Epoch 7021/10000

2293   - 0s - loss: 6.1734e-04 - mean_absolute_error: 0.0147 - val_loss: 32.0483 - val_mean_absolute_error: 3.6083

2294 epoch_end_callback epoch 7020 lr 3.125e-05

2295 Epoch 7022/10000

2296   - 0s - loss: 6.8306e-04 - mean_absolute_error: 0.0158 - val_loss: 32.0371 - val_mean_absolute_error: 3.6081

2297 epoch_end_callback epoch 7021 lr 3.125e-05

2298 Epoch 7023/10000

2299   - 0s - loss: 5.6747e-04 - mean_absolute_error: 0.0142 - val_loss: 32.0565 - val_mean_absolute_error: 3.6051

2300 epoch_end_callback epoch 7022 lr 3.125e-05

2301 Epoch 7024/10000

2302   - 0s - loss: 6.8361e-04 - mean_absolute_error: 0.0149 - val_loss: 32.0196 - val_mean_absolute_error: 3.6063

2303 epoch_end_callback epoch 7023 lr 3.125e-05

2304 Epoch 7025/10000

2305   - 0s - loss: 5.8319e-04 - mean_absolute_error: 0.0130 - val_loss: 32.0393 - val_mean_absolute_error: 3.6061

2306 epoch_end_callback epoch 7024 lr 3.125e-05

2307 Epoch 7026/10000

2308   - 0s - loss: 6.9612e-04 - mean_absolute_error: 0.0156 - val_loss: 32.0260 - val_mean_absolute_error: 3.6073

2309 epoch_end_callback epoch 7025 lr 3.125e-05

2310 Epoch 7027/10000

2311   - 0s - loss: 5.7930e-04 - mean_absolute_error: 0.0140 - val_loss: 32.0115 - val_mean_absolute_error: 3.6063

2312 epoch_end_callback epoch 7026 lr 3.125e-05
2313 Epoch 7028/10000
2314 - 0s - loss: 7.6789e-04 - mean_absolute_error: 0.0167 - val_loss: 32.0392 - val_mean_absolute_error: 3.6061
2315 epoch_end_callback epoch 7027 lr 3.125e-05
2316 Epoch 7029/10000
2317 - 0s - loss: 6.8893e-04 - mean_absolute_error: 0.0140 - val_loss: 32.0301 - val_mean_absolute_error: 3.6074
2318 epoch_end_callback epoch 7028 lr 3.125e-05
2319 Epoch 7030/10000
2320 - 0s - loss: 4.9011e-04 - mean_absolute_error: 0.0099 - val_loss: 32.0373 - val_mean_absolute_error: 3.6078
2321
2322 Epoch 07030: saving model to ./model/ model_Epoch7030_val_mean_absolute_error3.608.h5
2323 epoch_end_callback epoch 7029 lr 3.125e-05
2324 Epoch 7031/10000
2325 - 0s - loss: 5.9725e-04 - mean_absolute_error: 0.0150 - val_loss: 32.0262 - val_mean_absolute_error: 3.6066
2326 epoch_end_callback epoch 7030 lr 3.125e-05
2327 Epoch 7032/10000
2328 - 0s - loss: 5.7741e-04 - mean_absolute_error: 0.0150 - val_loss: 31.9927 - val_mean_absolute_error: 3.6040
2329 epoch_end_callback epoch 7031 lr 3.125e-05
2330 Epoch 7033/10000
2331 - 0s - loss: 7.1302e-04 - mean_absolute_error: 0.0150 - val_loss: 32.0176 - val_mean_absolute_error: 3.6069
2332 epoch_end_callback epoch 7032 lr 3.125e-05
2333 Epoch 7034/10000
2334 - 0s - loss: 5.3851e-04 - mean_absolute_error: 0.0132 - val_loss: 32.0389 - val_mean_absolute_error: 3.6068
2335 epoch_end_callback epoch 7033 lr 3.125e-05
2336 Epoch 7035/10000
2337 - 0s - loss: 6.2861e-04 - mean_absolute_error: 0.0152 - val_loss: 31.9928 - val_mean_absolute_error: 3.6057
2338 epoch_end_callback epoch 7034 lr 3.125e-05
2339 Epoch 7036/10000

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2340    - 0s - loss: 5.7401e-04 - mean_absolute_error: 0.0146 -
        val_loss: 32.0508 - val_mean_absolute_error: 3.6085
2341  epoch_end_callback epoch 7035 lr 3.125e-05
2342  Epoch 7037/10000
2343    - 0s - loss: 6.4096e-04 - mean_absolute_error: 0.0145 -
        val_loss: 32.0804 - val_mean_absolute_error: 3.6095
2344  epoch_end_callback epoch 7036 lr 3.125e-05
2345  Epoch 7038/10000
2346    - 0s - loss: 6.0719e-04 - mean_absolute_error: 0.0134 -
        val_loss: 32.0564 - val_mean_absolute_error: 3.6070
2347  epoch_end_callback epoch 7037 lr 3.125e-05
2348  Epoch 7039/10000
2349    - 0s - loss: 7.5997e-04 - mean_absolute_error: 0.0150 -
        val_loss: 32.0410 - val_mean_absolute_error: 3.6062
2350  epoch_end_callback epoch 7038 lr 3.125e-05
2351  Epoch 7040/10000
2352    - 0s - loss: 4.7901e-04 - mean_absolute_error: 0.0126 -
        val_loss: 32.0223 - val_mean_absolute_error: 3.6073
2353
2354  Epoch 07040: saving model to ./model/
        model_Epoch7040_val_mean_absolute_error3.607.h5
2355  epoch_end_callback epoch 7039 lr 3.125e-05
2356  Epoch 7041/10000
2357    - 0s - loss: 6.3230e-04 - mean_absolute_error: 0.0149 -
        val_loss: 32.0313 - val_mean_absolute_error: 3.6089
2358  epoch_end_callback epoch 7040 lr 3.125e-05
2359  Epoch 7042/10000
2360    - 0s - loss: 7.8494e-04 - mean_absolute_error: 0.0153 -
        val_loss: 32.0178 - val_mean_absolute_error: 3.6052
2361  epoch_end_callback epoch 7041 lr 3.125e-05
2362  Epoch 7043/10000
2363    - 0s - loss: 5.5122e-04 - mean_absolute_error: 0.0134 -
        val_loss: 32.0852 - val_mean_absolute_error: 3.6121
2364  epoch_end_callback epoch 7042 lr 3.125e-05
2365  Epoch 7044/10000
2366    - 0s - loss: 5.5668e-04 - mean_absolute_error: 0.0137 -
        val_loss: 31.9999 - val_mean_absolute_error: 3.6074
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2367  epoch_end_callback epoch 7043 lr 3.125e-05
2368  Epoch 7045/10000
2369   - 0s - loss: 7.2046e-04 - mean_absolute_error: 0.0145 -
      val_loss: 32.0374 - val_mean_absolute_error: 3.6087
2370  epoch_end_callback epoch 7044 lr 3.125e-05
2371  Epoch 7046/10000
2372   - 0s - loss: 5.7628e-04 - mean_absolute_error: 0.0135 -
      val_loss: 31.9984 - val_mean_absolute_error: 3.6023
2373  epoch_end_callback epoch 7045 lr 3.125e-05
2374  Epoch 7047/10000
2375   - 0s - loss: 5.3501e-04 - mean_absolute_error: 0.0147 -
      val_loss: 32.0440 - val_mean_absolute_error: 3.6102
2376  epoch_end_callback epoch 7046 lr 3.125e-05
2377  Epoch 7048/10000
2378   - 0s - loss: 5.8753e-04 - mean_absolute_error: 0.0148 -
      val_loss: 32.0552 - val_mean_absolute_error: 3.6091
2379  epoch_end_callback epoch 7047 lr 3.125e-05
2380  Epoch 7049/10000
2381   - 0s - loss: 6.2014e-04 - mean_absolute_error: 0.0142 -
      val_loss: 32.0354 - val_mean_absolute_error: 3.6088
2382  epoch_end_callback epoch 7048 lr 3.125e-05
2383  Epoch 7050/10000
2384   - 0s - loss: 6.7194e-04 - mean_absolute_error: 0.0136 -
      val_loss: 32.0297 - val_mean_absolute_error: 3.6072
2385
2386  Epoch 07050: saving model to ./model/
      model_Epoch7050_val_mean_absolute_error3.607.h5
2387  epoch_end_callback epoch 7049 lr 3.125e-05
2388  Epoch 7051/10000
2389   - 0s - loss: 5.0241e-04 - mean_absolute_error: 0.0139 -
      val_loss: 31.9738 - val_mean_absolute_error: 3.6039
2390  epoch_end_callback epoch 7050 lr 3.125e-05
2391  Epoch 7052/10000
2392   - 0s - loss: 5.8495e-04 - mean_absolute_error: 0.0140 -
      val_loss: 32.0292 - val_mean_absolute_error: 3.6077
2393  epoch_end_callback epoch 7051 lr 3.125e-05
2394  Epoch 7053/10000
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2395    - 0s - loss: 6.5796e-04 - mean_absolute_error: 0.0143 -
        val_loss: 32.0178 - val_mean_absolute_error: 3.6076
2396  epoch_end_callback epoch 7052 lr 3.125e-05
2397  Epoch 7054/10000
2398    - 0s - loss: 5.0228e-04 - mean_absolute_error: 0.0139 -
        val_loss: 32.0153 - val_mean_absolute_error: 3.6035
2399  epoch_end_callback epoch 7053 lr 3.125e-05
2400  Epoch 7055/10000
2401    - 0s - loss: 6.2890e-04 - mean_absolute_error: 0.0142 -
        val_loss: 32.0521 - val_mean_absolute_error: 3.6083
2402  epoch_end_callback epoch 7054 lr 3.125e-05
2403  Epoch 7056/10000
2404    - 0s - loss: 6.0816e-04 - mean_absolute_error: 0.0135 -
        val_loss: 32.0382 - val_mean_absolute_error: 3.6097
2405  epoch_end_callback epoch 7055 lr 3.125e-05
2406  Epoch 7057/10000
2407    - 0s - loss: 6.0642e-04 - mean_absolute_error: 0.0148 -
        val_loss: 32.0907 - val_mean_absolute_error: 3.6108
2408  epoch_end_callback epoch 7056 lr 3.125e-05
2409  Epoch 7058/10000
2410    - 0s - loss: 5.6804e-04 - mean_absolute_error: 0.0130 -
        val_loss: 32.0157 - val_mean_absolute_error: 3.6092
2411  epoch_end_callback epoch 7057 lr 3.125e-05
2412  Epoch 7059/10000
2413    - 0s - loss: 5.8144e-04 - mean_absolute_error: 0.0142 -
        val_loss: 32.0583 - val_mean_absolute_error: 3.6107
2414  epoch_end_callback epoch 7058 lr 3.125e-05
2415  Epoch 7060/10000
2416    - 0s - loss: 7.3949e-04 - mean_absolute_error: 0.0157 -
        val_loss: 32.0379 - val_mean_absolute_error: 3.6071
2417
2418  Epoch 07060: saving model to ./model/
        model_Epoch7060_val_mean_absolute_error3.607.h5
2419  epoch_end_callback epoch 7059 lr 3.125e-05
2420  Epoch 7061/10000
2421    - 0s - loss: 6.4033e-04 - mean_absolute_error: 0.0136 -
        val_loss: 32.0403 - val_mean_absolute_error: 3.6072
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2422  epoch_end_callback epoch 7060 lr 3.125e-05
2423  Epoch 7062/10000
2424   - 0s - loss: 6.1949e-04 - mean_absolute_error: 0.0125 -
      val_loss: 31.9700 - val_mean_absolute_error: 3.6044
2425  epoch_end_callback epoch 7061 lr 3.125e-05
2426  Epoch 7063/10000
2427   - 0s - loss: 5.4766e-04 - mean_absolute_error: 0.0135 -
      val_loss: 31.9787 - val_mean_absolute_error: 3.6041
2428  epoch_end_callback epoch 7062 lr 3.125e-05
2429  Epoch 7064/10000
2430   - 0s - loss: 5.2873e-04 - mean_absolute_error: 0.0156 -
      val_loss: 32.0061 - val_mean_absolute_error: 3.6059
2431  epoch_end_callback epoch 7063 lr 3.125e-05
2432  Epoch 7065/10000
2433   - 0s - loss: 6.9537e-04 - mean_absolute_error: 0.0149 -
      val_loss: 32.0142 - val_mean_absolute_error: 3.6069
2434  epoch_end_callback epoch 7064 lr 3.125e-05
2435  Epoch 7066/10000
2436   - 0s - loss: 5.4358e-04 - mean_absolute_error: 0.0135 -
      val_loss: 32.1006 - val_mean_absolute_error: 3.6118
2437  epoch_end_callback epoch 7065 lr 3.125e-05
2438  Epoch 7067/10000
2439   - 0s - loss: 7.2640e-04 - mean_absolute_error: 0.0153 -
      val_loss: 32.0660 - val_mean_absolute_error: 3.6069
2440  epoch_end_callback epoch 7066 lr 3.125e-05
2441  Epoch 7068/10000
2442   - 0s - loss: 5.9796e-04 - mean_absolute_error: 0.0140 -
      val_loss: 31.9960 - val_mean_absolute_error: 3.6068
2443  epoch_end_callback epoch 7067 lr 3.125e-05
2444  Epoch 7069/10000
2445   - 0s - loss: 6.1711e-04 - mean_absolute_error: 0.0130 -
      val_loss: 32.0703 - val_mean_absolute_error: 3.6085
2446  epoch_end_callback epoch 7068 lr 3.125e-05
2447  Epoch 7070/10000
2448   - 0s - loss: 5.8939e-04 - mean_absolute_error: 0.0140 -
      val_loss: 32.0561 - val_mean_absolute_error: 3.6100
2449
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2450  Epoch 07070: saving model to ./model/
      model_Epoch7070_val_mean_absolute_error3.610.h5
2451  epoch_end_callback epoch 7069 lr 3.125e-05
2452  Epoch 7071/10000
2453   - 0s - loss: 6.7682e-04 - mean_absolute_error: 0.0151 -
      val_loss: 32.0434 - val_mean_absolute_error: 3.6092
2454  epoch_end_callback epoch 7070 lr 3.125e-05
2455  Epoch 7072/10000
2456   - 0s - loss: 5.1031e-04 - mean_absolute_error: 0.0135 -
      val_loss: 32.0600 - val_mean_absolute_error: 3.6065
2457  epoch_end_callback epoch 7071 lr 3.125e-05
2458  Epoch 7073/10000
2459   - 0s - loss: 5.7965e-04 - mean_absolute_error: 0.0134 -
      val_loss: 32.0130 - val_mean_absolute_error: 3.6050
2460  epoch_end_callback epoch 7072 lr 3.125e-05
2461  Epoch 7074/10000
2462   - 0s - loss: 5.1044e-04 - mean_absolute_error: 0.0138 -
      val_loss: 32.0832 - val_mean_absolute_error: 3.6085
2463  epoch_end_callback epoch 7073 lr 3.125e-05
2464  Epoch 7075/10000
2465   - 0s - loss: 4.6882e-04 - mean_absolute_error: 0.0130 -
      val_loss: 32.0919 - val_mean_absolute_error: 3.6085
2466  epoch_end_callback epoch 7074 lr 3.125e-05
2467  Epoch 7076/10000
2468   - 0s - loss: 5.4162e-04 - mean_absolute_error: 0.0142 -
      val_loss: 32.0064 - val_mean_absolute_error: 3.6048
2469  epoch_end_callback epoch 7075 lr 3.125e-05
2470  Epoch 7077/10000
2471   - 0s - loss: 7.1946e-04 - mean_absolute_error: 0.0141 -
      val_loss: 32.0080 - val_mean_absolute_error: 3.6065
2472  epoch_end_callback epoch 7076 lr 3.125e-05
2473  Epoch 7078/10000
2474   - 0s - loss: 5.7081e-04 - mean_absolute_error: 0.0131 -
      val_loss: 32.0508 - val_mean_absolute_error: 3.6065
2475  epoch_end_callback epoch 7077 lr 3.125e-05
2476  Epoch 7079/10000
2477   - 0s - loss: 4.7811e-04 - mean_absolute_error: 0.0136 -
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2477 val_loss: 32.0209 - val_mean_absolute_error: 3.6078

2478 epoch_end_callback epoch 7078 lr 3.125e-05

2479 Epoch 7080/10000

2480 - 0s - loss: 7.4052e-04 - mean_absolute_error: 0.0168 - val_loss: 32.0489 - val_mean_absolute_error: 3.6068

2481

2482 Epoch 07080: saving model to ./model/model_Epoch7080_val_mean_absolute_error3.607.h5

2483 epoch_end_callback epoch 7079 lr 3.125e-05

2484 Epoch 7081/10000

2485 - 0s - loss: 5.6437e-04 - mean_absolute_error: 0.0132 - val_loss: 32.0330 - val_mean_absolute_error: 3.6058

2486 epoch_end_callback epoch 7080 lr 3.125e-05

2487 Epoch 7082/10000

2488 - 0s - loss: 5.5596e-04 - mean_absolute_error: 0.0133 - val_loss: 32.0339 - val_mean_absolute_error: 3.6099

2489 epoch_end_callback epoch 7081 lr 3.125e-05

2490 Epoch 7083/10000

2491 - 0s - loss: 5.7376e-04 - mean_absolute_error: 0.0136 - val_loss: 32.0750 - val_mean_absolute_error: 3.6062

2492 epoch_end_callback epoch 7082 lr 3.125e-05

2493 Epoch 7084/10000

2494 - 0s - loss: 5.8353e-04 - mean_absolute_error: 0.0160 - val_loss: 32.0546 - val_mean_absolute_error: 3.6076

2495 epoch_end_callback epoch 7083 lr 3.125e-05

2496 Epoch 7085/10000

2497 - 0s - loss: 5.5821e-04 - mean_absolute_error: 0.0129 - val_loss: 32.0245 - val_mean_absolute_error: 3.6049

2498 epoch_end_callback epoch 7084 lr 3.125e-05

2499 Epoch 7086/10000

2500 - 0s - loss: 5.1479e-04 - mean_absolute_error: 0.0147 - val_loss: 32.0049 - val_mean_absolute_error: 3.6067

2501 epoch_end_callback epoch 7085 lr 3.125e-05

2502 Epoch 7087/10000

2503 - 0s - loss: 6.5165e-04 - mean_absolute_error: 0.0159 - val_loss: 32.0459 - val_mean_absolute_error: 3.6066

2504 epoch_end_callback epoch 7086 lr 3.125e-05

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2505  Epoch 7088/10000
2506   - 0s - loss: 5.9589e-04 - mean_absolute_error: 0.0146 -
      val_loss: 32.0324 - val_mean_absolute_error: 3.6070
2507  epoch_end_callback epoch 7087 lr 3.125e-05
2508  Epoch 7089/10000
2509   - 0s - loss: 6.9942e-04 - mean_absolute_error: 0.0149 -
      val_loss: 32.1020 - val_mean_absolute_error: 3.6101
2510  epoch_end_callback epoch 7088 lr 3.125e-05
2511  Epoch 7090/10000
2512   - 0s - loss: 4.9473e-04 - mean_absolute_error: 0.0123 -
      val_loss: 32.0621 - val_mean_absolute_error: 3.6088
2513
2514  Epoch 07090: saving model to ./model/
      model_Epoch7090_val_mean_absolute_error3.609.h5
2515  epoch_end_callback epoch 7089 lr 3.125e-05
2516  Epoch 7091/10000
2517   - 0s - loss: 6.4880e-04 - mean_absolute_error: 0.0150 -
      val_loss: 32.0057 - val_mean_absolute_error: 3.6082
2518  epoch_end_callback epoch 7090 lr 3.125e-05
2519  Epoch 7092/10000
2520   - 0s - loss: 6.1272e-04 - mean_absolute_error: 0.0155 -
      val_loss: 32.0837 - val_mean_absolute_error: 3.6087
2521  epoch_end_callback epoch 7091 lr 3.125e-05
2522  Epoch 7093/10000
2523   - 0s - loss: 5.4011e-04 - mean_absolute_error: 0.0148 -
      val_loss: 31.9404 - val_mean_absolute_error: 3.6044
2524  epoch_end_callback epoch 7092 lr 3.125e-05
2525  Epoch 7094/10000
2526   - 0s - loss: 5.5495e-04 - mean_absolute_error: 0.0124 -
      val_loss: 32.0769 - val_mean_absolute_error: 3.6117
2527  epoch_end_callback epoch 7093 lr 3.125e-05
2528  Epoch 7095/10000
2529   - 0s - loss: 6.6799e-04 - mean_absolute_error: 0.0140 -
      val_loss: 32.0326 - val_mean_absolute_error: 3.6075
2530  epoch_end_callback epoch 7094 lr 3.125e-05
2531  Epoch 7096/10000
2532   - 0s - loss: 5.8866e-04 - mean_absolute_error: 0.0143 -
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2532  val_loss: 32.0420 - val_mean_absolute_error: 3.6066
2533  epoch_end_callback epoch 7095 lr 3.125e-05
2534  Epoch 7097/10000
2535   - 0s - loss: 5.2717e-04 - mean_absolute_error: 0.0139 -
      val_loss: 32.0904 - val_mean_absolute_error: 3.6064
2536  epoch_end_callback epoch 7096 lr 3.125e-05
2537  Epoch 7098/10000
2538   - 0s - loss: 6.8957e-04 - mean_absolute_error: 0.0138 -
      val_loss: 32.0422 - val_mean_absolute_error: 3.6067
2539  epoch_end_callback epoch 7097 lr 3.125e-05
2540  Epoch 7099/10000
2541   - 0s - loss: 4.4780e-04 - mean_absolute_error: 0.0127 -
      val_loss: 31.9734 - val_mean_absolute_error: 3.6032
2542  epoch_end_callback epoch 7098 lr 3.125e-05
2543  Epoch 7100/10000
2544   - 0s - loss: 7.2871e-04 - mean_absolute_error: 0.0161 -
      val_loss: 32.0061 - val_mean_absolute_error: 3.6035
2545
2546  Epoch 07100: saving model to ./model/
      model_Epoch7100_val_mean_absolute_error3.604.h5
2547  epoch_end_callback epoch 7099 lr 3.125e-05
2548  Epoch 7101/10000
2549   - 0s - loss: 5.5317e-04 - mean_absolute_error: 0.0138 -
      val_loss: 32.0185 - val_mean_absolute_error: 3.6049
2550  epoch_end_callback epoch 7100 lr 3.125e-05
2551  Epoch 7102/10000
2552   - 0s - loss: 6.4233e-04 - mean_absolute_error: 0.0153 -
      val_loss: 32.0365 - val_mean_absolute_error: 3.6075
2553  epoch_end_callback epoch 7101 lr 3.125e-05
2554  Epoch 7103/10000
2555   - 0s - loss: 5.7487e-04 - mean_absolute_error: 0.0147 -
      val_loss: 32.1203 - val_mean_absolute_error: 3.6131
2556  epoch_end_callback epoch 7102 lr 3.125e-05
2557  Epoch 7104/10000
2558   - 0s - loss: 6.1083e-04 - mean_absolute_error: 0.0142 -
      val_loss: 32.0473 - val_mean_absolute_error: 3.6085
2559  epoch_end_callback epoch 7103 lr 3.125e-05
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2560  Epoch 7105/10000
2561   - 0s - loss: 5.8200e-04 - mean_absolute_error: 0.0149 -
      val_loss: 32.0556 - val_mean_absolute_error: 3.6086
2562  epoch_end_callback epoch 7104 lr 3.125e-05
2563  Epoch 7106/10000
2564   - 0s - loss: 5.8872e-04 - mean_absolute_error: 0.0135 -
      val_loss: 32.0415 - val_mean_absolute_error: 3.6072
2565  epoch_end_callback epoch 7105 lr 3.125e-05
2566  Epoch 7107/10000
2567   - 0s - loss: 6.0878e-04 - mean_absolute_error: 0.0149 -
      val_loss: 32.0259 - val_mean_absolute_error: 3.6065
2568  epoch_end_callback epoch 7106 lr 3.125e-05
2569  Epoch 7108/10000
2570   - 0s - loss: 6.7176e-04 - mean_absolute_error: 0.0153 -
      val_loss: 32.0355 - val_mean_absolute_error: 3.6068
2571  epoch_end_callback epoch 7107 lr 3.125e-05
2572  Epoch 7109/10000
2573   - 0s - loss: 5.3585e-04 - mean_absolute_error: 0.0126 -
      val_loss: 32.0542 - val_mean_absolute_error: 3.6064
2574  epoch_end_callback epoch 7108 lr 3.125e-05
2575  Epoch 7110/10000
2576   - 0s - loss: 6.4106e-04 - mean_absolute_error: 0.0158 -
      val_loss: 32.0472 - val_mean_absolute_error: 3.6073
2577
2578  Epoch 07110: saving model to ./model/
      model_Epoch7110_val_mean_absolute_error3.607.h5
2579  epoch_end_callback epoch 7109 lr 3.125e-05
2580  Epoch 7111/10000
2581   - 0s - loss: 5.7676e-04 - mean_absolute_error: 0.0132 -
      val_loss: 32.0739 - val_mean_absolute_error: 3.6123
2582  epoch_end_callback epoch 7110 lr 3.125e-05
2583  Epoch 7112/10000
2584   - 0s - loss: 5.7128e-04 - mean_absolute_error: 0.0134 -
      val_loss: 32.0859 - val_mean_absolute_error: 3.6095
2585  epoch_end_callback epoch 7111 lr 3.125e-05
2586  Epoch 7113/10000
2587   - 0s - loss: 5.4273e-04 - mean_absolute_error: 0.0128 -
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2587  val_loss: 32.0410 - val_mean_absolute_error: 3.6079
2588  epoch_end_callback epoch 7112 lr 3.125e-05
2589  Epoch 7114/10000
2590   - 0s - loss: 6.0910e-04 - mean_absolute_error: 0.0145 -
      val_loss: 32.0632 - val_mean_absolute_error: 3.6090
2591  epoch_end_callback epoch 7113 lr 3.125e-05
2592  Epoch 7115/10000
2593   - 0s - loss: 6.6766e-04 - mean_absolute_error: 0.0148 -
      val_loss: 32.0493 - val_mean_absolute_error: 3.6084
2594  epoch_end_callback epoch 7114 lr 3.125e-05
2595  Epoch 7116/10000
2596   - 0s - loss: 4.4616e-04 - mean_absolute_error: 0.0116 -
      val_loss: 32.0601 - val_mean_absolute_error: 3.6083
2597  epoch_end_callback epoch 7115 lr 3.125e-05
2598  Epoch 7117/10000
2599   - 0s - loss: 6.7804e-04 - mean_absolute_error: 0.0157 -
      val_loss: 32.0746 - val_mean_absolute_error: 3.6104
2600  epoch_end_callback epoch 7116 lr 3.125e-05
2601  Epoch 7118/10000
2602   - 0s - loss: 5.2068e-04 - mean_absolute_error: 0.0134 -
      val_loss: 32.0342 - val_mean_absolute_error: 3.6056
2603  epoch_end_callback epoch 7117 lr 3.125e-05
2604  Epoch 7119/10000
2605   - 0s - loss: 6.3520e-04 - mean_absolute_error: 0.0149 -
      val_loss: 32.0360 - val_mean_absolute_error: 3.6079
2606  epoch_end_callback epoch 7118 lr 3.125e-05
2607  Epoch 7120/10000
2608   - 0s - loss: 6.0535e-04 - mean_absolute_error: 0.0140 -
      val_loss: 32.0478 - val_mean_absolute_error: 3.6088
2609
2610  Epoch 07120: saving model to ./model/
      model_Epoch7120_val_mean_absolute_error3.609.h5
2611  epoch_end_callback epoch 7119 lr 3.125e-05
2612  Epoch 7121/10000
2613   - 0s - loss: 5.5628e-04 - mean_absolute_error: 0.0135 -
      val_loss: 31.9644 - val_mean_absolute_error: 3.6030
2614  epoch_end_callback epoch 7120 lr 3.125e-05
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2615  Epoch 7122/10000
2616   - 0s - loss: 5.7667e-04 - mean_absolute_error: 0.0141 -
       val_loss: 32.0552 - val_mean_absolute_error: 3.6086
2617  epoch_end_callback epoch 7121 lr 3.125e-05
2618  Epoch 7123/10000
2619   - 0s - loss: 5.1378e-04 - mean_absolute_error: 0.0144 -
       val_loss: 32.0417 - val_mean_absolute_error: 3.6082
2620  epoch_end_callback epoch 7122 lr 3.125e-05
2621  Epoch 7124/10000
2622   - 0s - loss: 5.2606e-04 - mean_absolute_error: 0.0139 -
       val_loss: 32.0791 - val_mean_absolute_error: 3.6091
2623  epoch_end_callback epoch 7123 lr 3.125e-05
2624  Epoch 7125/10000
2625   - 0s - loss: 5.2752e-04 - mean_absolute_error: 0.0137 -
       val_loss: 32.0006 - val_mean_absolute_error: 3.6057
2626  epoch_end_callback epoch 7124 lr 3.125e-05
2627  Epoch 7126/10000
2628   - 0s - loss: 6.1786e-04 - mean_absolute_error: 0.0143 -
       val_loss: 31.9929 - val_mean_absolute_error: 3.6069
2629  epoch_end_callback epoch 7125 lr 3.125e-05
2630  Epoch 7127/10000
2631   - 0s - loss: 6.5214e-04 - mean_absolute_error: 0.0152 -
       val_loss: 32.0786 - val_mean_absolute_error: 3.6083
2632  epoch_end_callback epoch 7126 lr 3.125e-05
2633  Epoch 7128/10000
2634   - 0s - loss: 5.3888e-04 - mean_absolute_error: 0.0136 -
       val_loss: 32.0546 - val_mean_absolute_error: 3.6078
2635  epoch_end_callback epoch 7127 lr 3.125e-05
2636  Epoch 7129/10000
2637   - 0s - loss: 6.3889e-04 - mean_absolute_error: 0.0148 -
       val_loss: 32.0950 - val_mean_absolute_error: 3.6099
2638  epoch_end_callback epoch 7128 lr 3.125e-05
2639  Epoch 7130/10000
2640   - 0s - loss: 5.7988e-04 - mean_absolute_error: 0.0138 -
       val_loss: 32.0297 - val_mean_absolute_error: 3.6060
2641
2642  Epoch 07130: saving model to ./model/
```

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2642 model_Epoch7130_val_mean_absolute_error3.606.h5
2643 epoch_end_callback epoch 7129 lr 3.125e-05
2644 Epoch 7131/10000
2645  - 0s - loss: 5.1694e-04 - mean_absolute_error: 0.0128 -
     val_loss: 32.0765 - val_mean_absolute_error: 3.6083
2646 epoch_end_callback epoch 7130 lr 3.125e-05
2647 Epoch 7132/10000
2648  - 0s - loss: 5.8715e-04 - mean_absolute_error: 0.0156 -
     val_loss: 32.0579 - val_mean_absolute_error: 3.6056
2649 epoch_end_callback epoch 7131 lr 3.125e-05
2650 Epoch 7133/10000
2651  - 0s - loss: 5.1143e-04 - mean_absolute_error: 0.0136 -
     val_loss: 32.0389 - val_mean_absolute_error: 3.6085
2652 epoch_end_callback epoch 7132 lr 3.125e-05
2653 Epoch 7134/10000
2654  - 0s - loss: 6.3692e-04 - mean_absolute_error: 0.0151 -
     val_loss: 32.0286 - val_mean_absolute_error: 3.6107
2655 epoch_end_callback epoch 7133 lr 3.125e-05
2656 Epoch 7135/10000
2657  - 0s - loss: 4.5777e-04 - mean_absolute_error: 0.0125 -
     val_loss: 32.0654 - val_mean_absolute_error: 3.6080
2658 epoch_end_callback epoch 7134 lr 3.125e-05
2659 Epoch 7136/10000
2660  - 0s - loss: 7.8102e-04 - mean_absolute_error: 0.0172 -
     val_loss: 32.0185 - val_mean_absolute_error: 3.6031
2661 epoch_end_callback epoch 7135 lr 3.125e-05
2662 Epoch 7137/10000
2663  - 0s - loss: 5.3784e-04 - mean_absolute_error: 0.0138 -
     val_loss: 32.0183 - val_mean_absolute_error: 3.6084
2664 epoch_end_callback epoch 7136 lr 3.125e-05
2665 Epoch 7138/10000
2666  - 0s - loss: 6.3162e-04 - mean_absolute_error: 0.0146 -
     val_loss: 32.0748 - val_mean_absolute_error: 3.6072
2667 epoch_end_callback epoch 7137 lr 3.125e-05
2668 Epoch 7139/10000
2669  - 0s - loss: 7.4073e-04 - mean_absolute_error: 0.0153 -
     val_loss: 32.0505 - val_mean_absolute_error: 3.6081
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2670  epoch_end_callback epoch 7138 lr 3.125e-05
2671  Epoch 7140/10000
2672   - 0s - loss: 5.1213e-04 - mean_absolute_error: 0.0122 -
      val_loss: 32.0673 - val_mean_absolute_error: 3.6091
2673
2674  Epoch 07140: saving model to ./model/
      model_Epoch7140_val_mean_absolute_error3.609.h5
2675  epoch_end_callback epoch 7139 lr 3.125e-05
2676  Epoch 7141/10000
2677   - 0s - loss: 5.9088e-04 - mean_absolute_error: 0.0155 -
      val_loss: 32.0436 - val_mean_absolute_error: 3.6077
2678  epoch_end_callback epoch 7140 lr 3.125e-05
2679  Epoch 7142/10000
2680   - 0s - loss: 5.5590e-04 - mean_absolute_error: 0.0136 -
      val_loss: 32.0456 - val_mean_absolute_error: 3.6083
2681  epoch_end_callback epoch 7141 lr 3.125e-05
2682  Epoch 7143/10000
2683   - 0s - loss: 5.8837e-04 - mean_absolute_error: 0.0150 -
      val_loss: 32.0109 - val_mean_absolute_error: 3.6072
2684  epoch_end_callback epoch 7142 lr 3.125e-05
2685  Epoch 7144/10000
2686   - 0s - loss: 6.0945e-04 - mean_absolute_error: 0.0150 -
      val_loss: 32.0609 - val_mean_absolute_error: 3.6090
2687  epoch_end_callback epoch 7143 lr 3.125e-05
2688  Epoch 7145/10000
2689   - 0s - loss: 5.8222e-04 - mean_absolute_error: 0.0149 -
      val_loss: 32.0403 - val_mean_absolute_error: 3.6075
2690  epoch_end_callback epoch 7144 lr 3.125e-05
2691  Epoch 7146/10000
2692   - 0s - loss: 6.0293e-04 - mean_absolute_error: 0.0136 -
      val_loss: 32.0717 - val_mean_absolute_error: 3.6115
2693  epoch_end_callback epoch 7145 lr 3.125e-05
2694  Epoch 7147/10000
2695   - 0s - loss: 6.1712e-04 - mean_absolute_error: 0.0140 -
      val_loss: 32.0548 - val_mean_absolute_error: 3.6084
2696  epoch_end_callback epoch 7146 lr 3.125e-05
2697  Epoch 7148/10000
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2698    - 0s - loss: 5.9615e-04 - mean_absolute_error: 0.0140 -
        val_loss: 32.0452 - val_mean_absolute_error: 3.6053
2699    epoch_end_callback epoch 7147 lr 3.125e-05
2700    Epoch 7149/10000
2701    - 0s - loss: 4.7630e-04 - mean_absolute_error: 0.0131 -
        val_loss: 32.0846 - val_mean_absolute_error: 3.6096
2702    epoch_end_callback epoch 7148 lr 3.125e-05
2703    Epoch 7150/10000
2704    - 0s - loss: 6.0188e-04 - mean_absolute_error: 0.0146 -
        val_loss: 32.0798 - val_mean_absolute_error: 3.6054
2705
2706    Epoch 07150: saving model to ./model/
        model_Epoch7150_val_mean_absolute_error3.605.h5
2707    epoch_end_callback epoch 7149 lr 3.125e-05
2708    Epoch 7151/10000
2709    - 0s - loss: 5.6658e-04 - mean_absolute_error: 0.0142 -
        val_loss: 32.0642 - val_mean_absolute_error: 3.6069
2710    epoch_end_callback epoch 7150 lr 3.125e-05
2711    Epoch 7152/10000
2712    - 0s - loss: 6.1395e-04 - mean_absolute_error: 0.0129 -
        val_loss: 32.0710 - val_mean_absolute_error: 3.6109
2713    epoch_end_callback epoch 7151 lr 3.125e-05
2714    Epoch 7153/10000
2715    - 0s - loss: 5.8725e-04 - mean_absolute_error: 0.0134 -
        val_loss: 32.0737 - val_mean_absolute_error: 3.6046
2716    epoch_end_callback epoch 7152 lr 3.125e-05
2717    Epoch 7154/10000
2718    - 0s - loss: 6.0529e-04 - mean_absolute_error: 0.0154 -
        val_loss: 32.1671 - val_mean_absolute_error: 3.6107
2719    epoch_end_callback epoch 7153 lr 3.125e-05
2720    Epoch 7155/10000
2721    - 0s - loss: 5.5877e-04 - mean_absolute_error: 0.0138 -
        val_loss: 32.0523 - val_mean_absolute_error: 3.6092
2722    epoch_end_callback epoch 7154 lr 3.125e-05
2723    Epoch 7156/10000
2724    - 0s - loss: 6.3948e-04 - mean_absolute_error: 0.0146 -
        val_loss: 32.0406 - val_mean_absolute_error: 3.6066
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2725  epoch_end_callback epoch 7155 lr 3.125e-05
2726  Epoch 7157/10000
2727   - 0s - loss: 5.8911e-04 - mean_absolute_error: 0.0138 -
      val_loss: 32.1011 - val_mean_absolute_error: 3.6085
2728  epoch_end_callback epoch 7156 lr 3.125e-05
2729  Epoch 7158/10000
2730   - 0s - loss: 5.9907e-04 - mean_absolute_error: 0.0151 -
      val_loss: 32.0668 - val_mean_absolute_error: 3.6066
2731  epoch_end_callback epoch 7157 lr 3.125e-05
2732  Epoch 7159/10000
2733   - 0s - loss: 5.8218e-04 - mean_absolute_error: 0.0137 -
      val_loss: 32.0019 - val_mean_absolute_error: 3.6082
2734  epoch_end_callback epoch 7158 lr 3.125e-05
2735  Epoch 7160/10000
2736   - 0s - loss: 6.3660e-04 - mean_absolute_error: 0.0150 -
      val_loss: 32.0773 - val_mean_absolute_error: 3.6088
2737
2738  Epoch 07160: saving model to ./model/
      model_Epoch7160_val_mean_absolute_error3.609.h5
2739  epoch_end_callback epoch 7159 lr 3.125e-05
2740  Epoch 7161/10000
2741   - 0s - loss: 5.4482e-04 - mean_absolute_error: 0.0133 -
      val_loss: 32.0698 - val_mean_absolute_error: 3.6100
2742  epoch_end_callback epoch 7160 lr 3.125e-05
2743  Epoch 7162/10000
2744   - 0s - loss: 6.4979e-04 - mean_absolute_error: 0.0154 -
      val_loss: 32.0776 - val_mean_absolute_error: 3.6096
2745  epoch_end_callback epoch 7161 lr 3.125e-05
2746  Epoch 7163/10000
2747   - 0s - loss: 5.1477e-04 - mean_absolute_error: 0.0130 -
      val_loss: 32.0953 - val_mean_absolute_error: 3.6089
2748  epoch_end_callback epoch 7162 lr 3.125e-05
2749  Epoch 7164/10000
2750   - 0s - loss: 5.7904e-04 - mean_absolute_error: 0.0145 -
      val_loss: 32.0682 - val_mean_absolute_error: 3.6047
2751  epoch_end_callback epoch 7163 lr 3.125e-05
2752  Epoch 7165/10000
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2753   - 0s - loss: 5.8407e-04 - mean_absolute_error: 0.0139 -
       val_loss: 32.0602 - val_mean_absolute_error: 3.6097
2754 epoch_end_callback epoch 7164 lr 3.125e-05
2755 Epoch 7166/10000
2756   - 0s - loss: 6.1729e-04 - mean_absolute_error: 0.0153 -
       val_loss: 32.0708 - val_mean_absolute_error: 3.6087
2757 epoch_end_callback epoch 7165 lr 3.125e-05
2758 Epoch 7167/10000
2759   - 0s - loss: 5.5248e-04 - mean_absolute_error: 0.0140 -
       val_loss: 32.0585 - val_mean_absolute_error: 3.6068
2760 epoch_end_callback epoch 7166 lr 3.125e-05
2761 Epoch 7168/10000
2762   - 0s - loss: 5.1036e-04 - mean_absolute_error: 0.0141 -
       val_loss: 32.1196 - val_mean_absolute_error: 3.6079
2763 epoch_end_callback epoch 7167 lr 3.125e-05
2764 Epoch 7169/10000
2765   - 0s - loss: 4.7172e-04 - mean_absolute_error: 0.0143 -
       val_loss: 32.1000 - val_mean_absolute_error: 3.6068
2766 epoch_end_callback epoch 7168 lr 3.125e-05
2767 Epoch 7170/10000
2768   - 0s - loss: 6.9035e-04 - mean_absolute_error: 0.0167 -
       val_loss: 32.0410 - val_mean_absolute_error: 3.6070
2769
2770 Epoch 07170: saving model to ./model/
       model_Epoch7170_val_mean_absolute_error3.607.h5
2771 epoch_end_callback epoch 7169 lr 3.125e-05
2772 Epoch 7171/10000
2773   - 0s - loss: 5.0517e-04 - mean_absolute_error: 0.0127 -
       val_loss: 32.0683 - val_mean_absolute_error: 3.6093
2774 epoch_end_callback epoch 7170 lr 3.125e-05
2775 Epoch 7172/10000
2776   - 0s - loss: 6.1044e-04 - mean_absolute_error: 0.0141 -
       val_loss: 32.0519 - val_mean_absolute_error: 3.6069
2777 epoch_end_callback epoch 7171 lr 3.125e-05
2778 Epoch 7173/10000
2779   - 0s - loss: 5.9046e-04 - mean_absolute_error: 0.0148 -
       val_loss: 32.0272 - val_mean_absolute_error: 3.6053
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2780  epoch_end_callback epoch 7172 lr 3.125e-05
2781  Epoch 7174/10000
2782   - 0s - loss: 6.7318e-04 - mean_absolute_error: 0.0155 -
      val_loss: 32.0593 - val_mean_absolute_error: 3.6087
2783  epoch_end_callback epoch 7173 lr 3.125e-05
2784  Epoch 7175/10000
2785   - 0s - loss: 4.6780e-04 - mean_absolute_error: 0.0127 -
      val_loss: 32.0330 - val_mean_absolute_error: 3.6108
2786  epoch_end_callback epoch 7174 lr 3.125e-05
2787  Epoch 7176/10000
2788   - 0s - loss: 7.8112e-04 - mean_absolute_error: 0.0157 -
      val_loss: 32.0459 - val_mean_absolute_error: 3.6104
2789  epoch_end_callback epoch 7175 lr 3.125e-05
2790  Epoch 7177/10000
2791   - 0s - loss: 5.3555e-04 - mean_absolute_error: 0.0129 -
      val_loss: 32.0738 - val_mean_absolute_error: 3.6061
2792  epoch_end_callback epoch 7176 lr 3.125e-05
2793  Epoch 7178/10000
2794   - 0s - loss: 5.9619e-04 - mean_absolute_error: 0.0152 -
      val_loss: 32.0525 - val_mean_absolute_error: 3.6080
2795  epoch_end_callback epoch 7177 lr 3.125e-05
2796  Epoch 7179/10000
2797   - 0s - loss: 4.7150e-04 - mean_absolute_error: 0.0131 -
      val_loss: 32.0581 - val_mean_absolute_error: 3.6122
2798  epoch_end_callback epoch 7178 lr 3.125e-05
2799  Epoch 7180/10000
2800   - 0s - loss: 5.9274e-04 - mean_absolute_error: 0.0137 -
      val_loss: 32.0789 - val_mean_absolute_error: 3.6091
2801
2802  Epoch 07180: saving model to ./model/
      model_Epoch7180_val_mean_absolute_error3.609.h5
2803  epoch_end_callback epoch 7179 lr 3.125e-05
2804  Epoch 7181/10000
2805   - 0s - loss: 5.8500e-04 - mean_absolute_error: 0.0152 -
      val_loss: 32.0809 - val_mean_absolute_error: 3.6097
2806  epoch_end_callback epoch 7180 lr 3.125e-05
2807  Epoch 7182/10000
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2808     - 0s - loss: 5.3548e-04 - mean_absolute_error: 0.0138 -
         val_loss: 32.0177 - val_mean_absolute_error: 3.6069
2809 epoch_end_callback epoch 7181 lr 3.125e-05
2810 Epoch 7183/10000
2811     - 0s - loss: 5.3121e-04 - mean_absolute_error: 0.0130 -
         val_loss: 31.9908 - val_mean_absolute_error: 3.6053
2812 epoch_end_callback epoch 7182 lr 3.125e-05
2813 Epoch 7184/10000
2814     - 0s - loss: 6.2618e-04 - mean_absolute_error: 0.0168 -
         val_loss: 32.0868 - val_mean_absolute_error: 3.6102
2815 epoch_end_callback epoch 7183 lr 3.125e-05
2816 Epoch 7185/10000
2817     - 0s - loss: 5.9630e-04 - mean_absolute_error: 0.0135 -
         val_loss: 32.0581 - val_mean_absolute_error: 3.6088
2818 epoch_end_callback epoch 7184 lr 3.125e-05
2819 Epoch 7186/10000
2820     - 0s - loss: 5.9332e-04 - mean_absolute_error: 0.0137 -
         val_loss: 32.0485 - val_mean_absolute_error: 3.6032
2821 epoch_end_callback epoch 7185 lr 3.125e-05
2822 Epoch 7187/10000
2823     - 0s - loss: 6.6965e-04 - mean_absolute_error: 0.0149 -
         val_loss: 32.0695 - val_mean_absolute_error: 3.6084
2824 epoch_end_callback epoch 7186 lr 3.125e-05
2825 Epoch 7188/10000
2826     - 0s - loss: 5.4923e-04 - mean_absolute_error: 0.0137 -
         val_loss: 32.0874 - val_mean_absolute_error: 3.6072
2827 epoch_end_callback epoch 7187 lr 3.125e-05
2828 Epoch 7189/10000
2829     - 0s - loss: 6.1418e-04 - mean_absolute_error: 0.0146 -
         val_loss: 32.0464 - val_mean_absolute_error: 3.6057
2830 epoch_end_callback epoch 7188 lr 3.125e-05
2831 Epoch 7190/10000
2832     - 0s - loss: 5.3976e-04 - mean_absolute_error: 0.0131 -
         val_loss: 32.0252 - val_mean_absolute_error: 3.6098
2833
2834 Epoch 07190: saving model to ./model/
         model_Epoch7190_val_mean_absolute_error3.610.h5
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2835 epoch_end_callback epoch 7189 lr 3.125e-05
2836 Epoch 7191/10000
2837  - 0s - loss: 5.7761e-04 - mean_absolute_error: 0.0139 -
     val_loss: 32.0822 - val_mean_absolute_error: 3.6055
2838 epoch_end_callback epoch 7190 lr 3.125e-05
2839 Epoch 7192/10000
2840  - 0s - loss: 4.7489e-04 - mean_absolute_error: 0.0135 -
     val_loss: 32.1269 - val_mean_absolute_error: 3.6106
2841 epoch_end_callback epoch 7191 lr 3.125e-05
2842 Epoch 7193/10000
2843  - 0s - loss: 4.5248e-04 - mean_absolute_error: 0.0126 -
     val_loss: 32.0712 - val_mean_absolute_error: 3.6101
2844 epoch_end_callback epoch 7192 lr 3.125e-05
2845 Epoch 7194/10000
2846  - 0s - loss: 6.4935e-04 - mean_absolute_error: 0.0156 -
     val_loss: 32.0353 - val_mean_absolute_error: 3.6078
2847 epoch_end_callback epoch 7193 lr 3.125e-05
2848 Epoch 7195/10000
2849  - 0s - loss: 5.0564e-04 - mean_absolute_error: 0.0133 -
     val_loss: 32.0774 - val_mean_absolute_error: 3.6057
2850 epoch_end_callback epoch 7194 lr 3.125e-05
2851 Epoch 7196/10000
2852  - 0s - loss: 5.8053e-04 - mean_absolute_error: 0.0139 -
     val_loss: 32.0527 - val_mean_absolute_error: 3.6049
2853 epoch_end_callback epoch 7195 lr 3.125e-05
2854 Epoch 7197/10000
2855  - 0s - loss: 6.6626e-04 - mean_absolute_error: 0.0151 -
     val_loss: 32.1180 - val_mean_absolute_error: 3.6103
2856 epoch_end_callback epoch 7196 lr 3.125e-05
2857 Epoch 7198/10000
2858  - 0s - loss: 4.8502e-04 - mean_absolute_error: 0.0125 -
     val_loss: 32.0271 - val_mean_absolute_error: 3.6091
2859 epoch_end_callback epoch 7197 lr 3.125e-05
2860 Epoch 7199/10000
2861  - 0s - loss: 6.7951e-04 - mean_absolute_error: 0.0154 -
     val_loss: 32.0486 - val_mean_absolute_error: 3.6087
2862 epoch_end_callback epoch 7198 lr 3.125e-05
```

```
2863 Epoch 7200/10000
2864  - 0s - loss: 4.9642e-04 - mean_absolute_error: 0.0130 -
     val_loss: 32.0330 - val_mean_absolute_error: 3.6055
2865
2866 Epoch 07200: saving model to ./model/
     model_Epoch7200_val_mean_absolute_error3.605.h5
2867 epoch_end_callback epoch 7199 lr 3.125e-05
2868 Epoch 7201/10000
2869  - 0s - loss: 6.8088e-04 - mean_absolute_error: 0.0159 -
     val_loss: 32.0453 - val_mean_absolute_error: 3.6089
2870 epoch_end_callback epoch 7200 lr 3.125e-05
2871 Epoch 7202/10000
2872  - 0s - loss: 5.0479e-04 - mean_absolute_error: 0.0143 -
     val_loss: 32.0552 - val_mean_absolute_error: 3.6072
2873 epoch_end_callback epoch 7201 lr 3.125e-05
2874 Epoch 7203/10000
2875  - 0s - loss: 5.3376e-04 - mean_absolute_error: 0.0146 -
     val_loss: 32.0603 - val_mean_absolute_error: 3.6052
2876 epoch_end_callback epoch 7202 lr 3.125e-05
2877 Epoch 7204/10000
2878  - 0s - loss: 6.3658e-04 - mean_absolute_error: 0.0143 -
     val_loss: 32.0323 - val_mean_absolute_error: 3.6059
2879 epoch_end_callback epoch 7203 lr 3.125e-05
2880 Epoch 7205/10000
2881  - 0s - loss: 5.8388e-04 - mean_absolute_error: 0.0139 -
     val_loss: 32.0668 - val_mean_absolute_error: 3.6070
2882 epoch_end_callback epoch 7204 lr 3.125e-05
2883 Epoch 7206/10000
2884  - 0s - loss: 6.2175e-04 - mean_absolute_error: 0.0154 -
     val_loss: 31.9581 - val_mean_absolute_error: 3.6034
2885 epoch_end_callback epoch 7205 lr 3.125e-05
2886 Epoch 7207/10000
2887  - 0s - loss: 5.5531e-04 - mean_absolute_error: 0.0127 -
     val_loss: 32.0858 - val_mean_absolute_error: 3.6114
2888 epoch_end_callback epoch 7206 lr 3.125e-05
2889 Epoch 7208/10000
2890  - 0s - loss: 5.3635e-04 - mean_absolute_error: 0.0129 -
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2890 val_loss: 32.0783 - val_mean_absolute_error: 3.6075

2891 epoch_end_callback epoch 7207 lr 3.125e-05

2892 Epoch 7209/10000

2893 - 0s - loss: 5.6832e-04 - mean_absolute_error: 0.0148 - val_loss: 32.0368 - val_mean_absolute_error: 3.6065

2894 epoch_end_callback epoch 7208 lr 3.125e-05

2895 Epoch 7210/10000

2896 - 0s - loss: 5.7884e-04 - mean_absolute_error: 0.0140 - val_loss: 32.0359 - val_mean_absolute_error: 3.6072

2897

2898 Epoch 07210: saving model to ./model/ model_Epoch7210_val_mean_absolute_error3.607.h5

2899 epoch_end_callback epoch 7209 lr 3.125e-05

2900 Epoch 7211/10000

2901 - 0s - loss: 5.6640e-04 - mean_absolute_error: 0.0142 - val_loss: 32.0412 - val_mean_absolute_error: 3.6080

2902 epoch_end_callback epoch 7210 lr 3.125e-05

2903 Epoch 7212/10000

2904 - 0s - loss: 6.7751e-04 - mean_absolute_error: 0.0141 - val_loss: 32.1078 - val_mean_absolute_error: 3.6144

2905 epoch_end_callback epoch 7211 lr 3.125e-05

2906 Epoch 7213/10000

2907 - 0s - loss: 5.5463e-04 - mean_absolute_error: 0.0135 - val_loss: 32.1231 - val_mean_absolute_error: 3.6118

2908 epoch_end_callback epoch 7212 lr 3.125e-05

2909 Epoch 7214/10000

2910 - 0s - loss: 5.7848e-04 - mean_absolute_error: 0.0145 - val_loss: 32.1054 - val_mean_absolute_error: 3.6085

2911 epoch_end_callback epoch 7213 lr 3.125e-05

2912 Epoch 7215/10000

2913 - 0s - loss: 6.1194e-04 - mean_absolute_error: 0.0141 - val_loss: 32.0908 - val_mean_absolute_error: 3.6098

2914 epoch_end_callback epoch 7214 lr 3.125e-05

2915 Epoch 7216/10000

2916 - 0s - loss: 5.6730e-04 - mean_absolute_error: 0.0133 - val_loss: 32.0226 - val_mean_absolute_error: 3.6037

2917 epoch_end_callback epoch 7215 lr 3.125e-05

2918 Epoch 7217/10000
2919 - 0s - loss: 6.3667e-04 - mean_absolute_error: 0.0158 - val_loss: 32.0584 - val_mean_absolute_error: 3.6067
2920 epoch_end_callback epoch 7216 lr 3.125e-05
2921 Epoch 7218/10000
2922 - 0s - loss: 6.4562e-04 - mean_absolute_error: 0.0146 - val_loss: 32.0704 - val_mean_absolute_error: 3.6055
2923 epoch_end_callback epoch 7217 lr 3.125e-05
2924 Epoch 7219/10000
2925 - 0s - loss: 5.4659e-04 - mean_absolute_error: 0.0131 - val_loss: 32.0800 - val_mean_absolute_error: 3.6078
2926 epoch_end_callback epoch 7218 lr 3.125e-05
2927 Epoch 7220/10000
2928 - 0s - loss: 6.3946e-04 - mean_absolute_error: 0.0148 - val_loss: 32.0490 - val_mean_absolute_error: 3.6075
2929
2930 Epoch 07220: saving model to ./model/model_Epoch7220_val_mean_absolute_error3.607.h5
2931 epoch_end_callback epoch 7219 lr 3.125e-05
2932 Epoch 7221/10000
2933 - 0s - loss: 5.3616e-04 - mean_absolute_error: 0.0135 - val_loss: 32.0648 - val_mean_absolute_error: 3.6063
2934 epoch_end_callback epoch 7220 lr 3.125e-05
2935 Epoch 7222/10000
2936 - 0s - loss: 6.8278e-04 - mean_absolute_error: 0.0150 - val_loss: 32.1129 - val_mean_absolute_error: 3.6084
2937 epoch_end_callback epoch 7221 lr 3.125e-05
2938 Epoch 7223/10000
2939 - 0s - loss: 6.0811e-04 - mean_absolute_error: 0.0140 - val_loss: 32.1279 - val_mean_absolute_error: 3.6115
2940 epoch_end_callback epoch 7222 lr 3.125e-05
2941 Epoch 7224/10000
2942 - 0s - loss: 6.0944e-04 - mean_absolute_error: 0.0143 - val_loss: 32.0814 - val_mean_absolute_error: 3.6119
2943 epoch_end_callback epoch 7223 lr 3.125e-05
2944 Epoch 7225/10000
2945 - 0s - loss: 5.0911e-04 - mean_absolute_error: 0.0127 -

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2945  val_loss: 32.0591 - val_mean_absolute_error: 3.6054
2946  epoch_end_callback epoch 7224 lr 3.125e-05
2947  Epoch 7226/10000
2948   - 0s - loss: 5.4314e-04 - mean_absolute_error: 0.0132 -
      val_loss: 32.0720 - val_mean_absolute_error: 3.6115
2949  epoch_end_callback epoch 7225 lr 3.125e-05
2950  Epoch 7227/10000
2951   - 0s - loss: 5.6551e-04 - mean_absolute_error: 0.0130 -
      val_loss: 32.0389 - val_mean_absolute_error: 3.6031
2952  epoch_end_callback epoch 7226 lr 3.125e-05
2953  Epoch 7228/10000
2954   - 0s - loss: 6.2276e-04 - mean_absolute_error: 0.0160 -
      val_loss: 32.0337 - val_mean_absolute_error: 3.6041
2955  epoch_end_callback epoch 7227 lr 3.125e-05
2956  Epoch 7229/10000
2957   - 0s - loss: 5.6368e-04 - mean_absolute_error: 0.0148 -
      val_loss: 32.0864 - val_mean_absolute_error: 3.6074
2958  epoch_end_callback epoch 7228 lr 3.125e-05
2959  Epoch 7230/10000
2960   - 0s - loss: 5.3695e-04 - mean_absolute_error: 0.0123 -
      val_loss: 32.0743 - val_mean_absolute_error: 3.6075
2961
2962  Epoch 07230: saving model to ./model/
      model_Epoch7230_val_mean_absolute_error3.607.h5
2963  epoch_end_callback epoch 7229 lr 3.125e-05
2964  Epoch 7231/10000
2965   - 0s - loss: 7.8463e-04 - mean_absolute_error: 0.0163 -
      val_loss: 32.0718 - val_mean_absolute_error: 3.6070
2966  epoch_end_callback epoch 7230 lr 3.125e-05
2967  Epoch 7232/10000
2968   - 0s - loss: 6.1661e-04 - mean_absolute_error: 0.0132 -
      val_loss: 32.0341 - val_mean_absolute_error: 3.6063
2969  epoch_end_callback epoch 7231 lr 3.125e-05
2970  Epoch 7233/10000
2971   - 0s - loss: 4.8412e-04 - mean_absolute_error: 0.0132 -
      val_loss: 32.0549 - val_mean_absolute_error: 3.6068
2972  epoch_end_callback epoch 7232 lr 3.125e-05
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2973  Epoch 7234/10000
2974   - 0s - loss: 5.8023e-04 - mean_absolute_error: 0.0143 -
       val_loss: 32.1101 - val_mean_absolute_error: 3.6094
2975  epoch_end_callback epoch 7233 lr 3.125e-05
2976  Epoch 7235/10000
2977   - 0s - loss: 6.7199e-04 - mean_absolute_error: 0.0159 -
       val_loss: 32.0726 - val_mean_absolute_error: 3.6052
2978  epoch_end_callback epoch 7234 lr 3.125e-05
2979  Epoch 7236/10000
2980   - 0s - loss: 4.8465e-04 - mean_absolute_error: 0.0125 -
       val_loss: 32.0897 - val_mean_absolute_error: 3.6069
2981  epoch_end_callback epoch 7235 lr 3.125e-05
2982  Epoch 7237/10000
2983   - 0s - loss: 5.4006e-04 - mean_absolute_error: 0.0145 -
       val_loss: 32.0435 - val_mean_absolute_error: 3.6058
2984  epoch_end_callback epoch 7236 lr 3.125e-05
2985  Epoch 7238/10000
2986   - 0s - loss: 5.9990e-04 - mean_absolute_error: 0.0148 -
       val_loss: 32.0780 - val_mean_absolute_error: 3.6111
2987  epoch_end_callback epoch 7237 lr 3.125e-05
2988  Epoch 7239/10000
2989   - 0s - loss: 5.9263e-04 - mean_absolute_error: 0.0140 -
       val_loss: 32.0610 - val_mean_absolute_error: 3.6075
2990  epoch_end_callback epoch 7238 lr 3.125e-05
2991  Epoch 7240/10000
2992   - 0s - loss: 5.3351e-04 - mean_absolute_error: 0.0131 -
       val_loss: 32.0770 - val_mean_absolute_error: 3.6082
2993
2994  Epoch 07240: saving model to ./model/
       model_Epoch7240_val_mean_absolute_error3.608.h5
2995  epoch_end_callback epoch 7239 lr 3.125e-05
2996  Epoch 7241/10000
2997   - 0s - loss: 6.3712e-04 - mean_absolute_error: 0.0150 -
       val_loss: 32.0603 - val_mean_absolute_error: 3.6066
2998  epoch_end_callback epoch 7240 lr 3.125e-05
2999  Epoch 7242/10000
3000   - 0s - loss: 4.5522e-04 - mean_absolute_error: 0.0121 -
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3000  val_loss: 32.0729 - val_mean_absolute_error: 3.6061
3001  epoch_end_callback epoch 7241 lr 3.125e-05
3002  Epoch 7243/10000
3003   - 0s - loss: 5.9222e-04 - mean_absolute_error: 0.0127 -
      val_loss: 32.0558 - val_mean_absolute_error: 3.6059
3004  epoch_end_callback epoch 7242 lr 3.125e-05
3005  Epoch 7244/10000
3006   - 0s - loss: 5.8013e-04 - mean_absolute_error: 0.0136 -
      val_loss: 32.1040 - val_mean_absolute_error: 3.6093
3007  epoch_end_callback epoch 7243 lr 3.125e-05
3008  Epoch 7245/10000
3009   - 0s - loss: 6.0927e-04 - mean_absolute_error: 0.0142 -
      val_loss: 32.0475 - val_mean_absolute_error: 3.6088
3010  epoch_end_callback epoch 7244 lr 3.125e-05
3011  Epoch 7246/10000
3012   - 0s - loss: 4.9776e-04 - mean_absolute_error: 0.0138 -
      val_loss: 32.1096 - val_mean_absolute_error: 3.6125
3013  epoch_end_callback epoch 7245 lr 3.125e-05
3014  Epoch 7247/10000
3015   - 0s - loss: 6.5541e-04 - mean_absolute_error: 0.0152 -
      val_loss: 31.9915 - val_mean_absolute_error: 3.6069
3016  epoch_end_callback epoch 7246 lr 3.125e-05
3017  Epoch 7248/10000
3018   - 0s - loss: 5.3846e-04 - mean_absolute_error: 0.0139 -
      val_loss: 32.0879 - val_mean_absolute_error: 3.6093
3019  epoch_end_callback epoch 7247 lr 3.125e-05
3020  Epoch 7249/10000
3021   - 0s - loss: 6.0118e-04 - mean_absolute_error: 0.0160 -
      val_loss: 32.1120 - val_mean_absolute_error: 3.6088
3022  epoch_end_callback epoch 7248 lr 3.125e-05
3023  Epoch 7250/10000
3024   - 0s - loss: 4.8585e-04 - mean_absolute_error: 0.0121 -
      val_loss: 32.0674 - val_mean_absolute_error: 3.6083
3025
3026  Epoch 07250: saving model to ./model/
      model_Epoch7250_val_mean_absolute_error3.608.h5
3027  epoch_end_callback epoch 7249 lr 3.125e-05
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3028  Epoch 7251/10000
3029   - 0s - loss: 5.9849e-04 - mean_absolute_error: 0.0152 -
      val_loss: 32.0553 - val_mean_absolute_error: 3.6066
3030  epoch_end_callback epoch 7250 lr 3.125e-05
3031  Epoch 7252/10000
3032   - 0s - loss: 6.0517e-04 - mean_absolute_error: 0.0146 -
      val_loss: 32.0693 - val_mean_absolute_error: 3.6136
3033  epoch_end_callback epoch 7251 lr 3.125e-05
3034  Epoch 7253/10000
3035   - 0s - loss: 4.9082e-04 - mean_absolute_error: 0.0132 -
      val_loss: 32.0932 - val_mean_absolute_error: 3.6095
3036  epoch_end_callback epoch 7252 lr 3.125e-05
3037  Epoch 7254/10000
3038   - 0s - loss: 5.8736e-04 - mean_absolute_error: 0.0147 -
      val_loss: 32.0500 - val_mean_absolute_error: 3.6091
3039  epoch_end_callback epoch 7253 lr 3.125e-05
3040  Epoch 7255/10000
3041   - 0s - loss: 5.8141e-04 - mean_absolute_error: 0.0133 -
      val_loss: 32.0760 - val_mean_absolute_error: 3.6079
3042  epoch_end_callback epoch 7254 lr 3.125e-05
3043  Epoch 7256/10000
3044   - 0s - loss: 5.5239e-04 - mean_absolute_error: 0.0147 -
      val_loss: 32.0586 - val_mean_absolute_error: 3.6060
3045  epoch_end_callback epoch 7255 lr 3.125e-05
3046  Epoch 7257/10000
3047   - 0s - loss: 4.7252e-04 - mean_absolute_error: 0.0128 -
      val_loss: 32.0579 - val_mean_absolute_error: 3.6089
3048  epoch_end_callback epoch 7256 lr 3.125e-05
3049  Epoch 7258/10000
3050   - 0s - loss: 6.6899e-04 - mean_absolute_error: 0.0161 -
      val_loss: 32.0790 - val_mean_absolute_error: 3.6083
3051  epoch_end_callback epoch 7257 lr 3.125e-05
3052  Epoch 7259/10000
3053   - 0s - loss: 5.4273e-04 - mean_absolute_error: 0.0124 -
      val_loss: 32.1512 - val_mean_absolute_error: 3.6097
3054  epoch_end_callback epoch 7258 lr 3.125e-05
3055  Epoch 7260/10000
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3056    - 0s - loss: 6.0365e-04 - mean_absolute_error: 0.0154 -
        val_loss: 32.1491 - val_mean_absolute_error: 3.6092

3057

3058    Epoch 07260: saving model to ./model/
        model_Epoch7260_val_mean_absolute_error3.609.h5

3059    epoch_end_callback epoch 7259 lr 3.125e-05

3060    Epoch 7261/10000

3061     - 0s - loss: 5.5123e-04 - mean_absolute_error: 0.0139 -
        val_loss: 32.0542 - val_mean_absolute_error: 3.6066

3062    epoch_end_callback epoch 7260 lr 3.125e-05

3063    Epoch 7262/10000

3064     - 0s - loss: 5.9842e-04 - mean_absolute_error: 0.0146 -
        val_loss: 32.0002 - val_mean_absolute_error: 3.6040

3065    epoch_end_callback epoch 7261 lr 3.125e-05

3066    Epoch 7263/10000

3067     - 0s - loss: 5.0996e-04 - mean_absolute_error: 0.0133 -
        val_loss: 32.1386 - val_mean_absolute_error: 3.6107

3068    epoch_end_callback epoch 7262 lr 3.125e-05

3069    Epoch 7264/10000

3070     - 0s - loss: 6.4102e-04 - mean_absolute_error: 0.0143 -
        val_loss: 32.0648 - val_mean_absolute_error: 3.6073

3071    epoch_end_callback epoch 7263 lr 3.125e-05

3072    Epoch 7265/10000

3073     - 0s - loss: 6.1428e-04 - mean_absolute_error: 0.0149 -
        val_loss: 32.1084 - val_mean_absolute_error: 3.6106

3074    epoch_end_callback epoch 7264 lr 3.125e-05

3075    Epoch 7266/10000

3076     - 0s - loss: 5.6172e-04 - mean_absolute_error: 0.0140 -
        val_loss: 32.1336 - val_mean_absolute_error: 3.6099

3077    epoch_end_callback epoch 7265 lr 3.125e-05

3078    Epoch 7267/10000

3079     - 0s - loss: 6.0528e-04 - mean_absolute_error: 0.0141 -
        val_loss: 32.0792 - val_mean_absolute_error: 3.6080

3080    epoch_end_callback epoch 7266 lr 3.125e-05

3081    Epoch 7268/10000

3082     - 0s - loss: 5.7429e-04 - mean_absolute_error: 0.0144 -
        val_loss: 32.1335 - val_mean_absolute_error: 3.6084
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3083 epoch_end_callback epoch 7267 lr 3.125e-05
3084 Epoch 7269/10000
3085  - 0s - loss: 5.7057e-04 - mean_absolute_error: 0.0133 -
     val_loss: 32.1044 - val_mean_absolute_error: 3.6091
3086 epoch_end_callback epoch 7268 lr 3.125e-05
3087 Epoch 7270/10000
3088  - 0s - loss: 5.5184e-04 - mean_absolute_error: 0.0143 -
     val_loss: 32.0793 - val_mean_absolute_error: 3.6103
3089
3090 Epoch 07270: saving model to ./model/
     model_Epoch7270_val_mean_absolute_error3.610.h5
3091 epoch_end_callback epoch 7269 lr 3.125e-05
3092 Epoch 7271/10000
3093  - 0s - loss: 5.5098e-04 - mean_absolute_error: 0.0147 -
     val_loss: 32.0752 - val_mean_absolute_error: 3.6078
3094 epoch_end_callback epoch 7270 lr 3.125e-05
3095 Epoch 7272/10000
3096  - 0s - loss: 5.6331e-04 - mean_absolute_error: 0.0138 -
     val_loss: 32.1267 - val_mean_absolute_error: 3.6097
3097 epoch_end_callback epoch 7271 lr 3.125e-05
3098 Epoch 7273/10000
3099  - 0s - loss: 5.6460e-04 - mean_absolute_error: 0.0134 -
     val_loss: 32.0865 - val_mean_absolute_error: 3.6093
3100 epoch_end_callback epoch 7272 lr 3.125e-05
3101 Epoch 7274/10000
3102  - 0s - loss: 5.2358e-04 - mean_absolute_error: 0.0137 -
     val_loss: 32.1127 - val_mean_absolute_error: 3.6093
3103 epoch_end_callback epoch 7273 lr 3.125e-05
3104 Epoch 7275/10000
3105  - 0s - loss: 5.9232e-04 - mean_absolute_error: 0.0153 -
     val_loss: 32.1030 - val_mean_absolute_error: 3.6067
3106 epoch_end_callback epoch 7274 lr 3.125e-05
3107 Epoch 7276/10000
3108  - 0s - loss: 5.6604e-04 - mean_absolute_error: 0.0156 -
     val_loss: 32.1037 - val_mean_absolute_error: 3.6088
3109 epoch_end_callback epoch 7275 lr 3.125e-05
3110 Epoch 7277/10000
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3111    - 0s - loss: 6.0621e-04 - mean_absolute_error: 0.0152 -
        val_loss: 32.1039 - val_mean_absolute_error: 3.6095
3112  epoch_end_callback epoch 7276 lr 3.125e-05
3113  Epoch 7278/10000
3114    - 0s - loss: 5.1446e-04 - mean_absolute_error: 0.0132 -
        val_loss: 32.1022 - val_mean_absolute_error: 3.6104
3115  epoch_end_callback epoch 7277 lr 3.125e-05
3116  Epoch 7279/10000
3117    - 0s - loss: 4.7780e-04 - mean_absolute_error: 0.0132 -
        val_loss: 32.1429 - val_mean_absolute_error: 3.6098
3118  epoch_end_callback epoch 7278 lr 3.125e-05
3119  Epoch 7280/10000
3120    - 0s - loss: 5.9562e-04 - mean_absolute_error: 0.0148 -
        val_loss: 32.0669 - val_mean_absolute_error: 3.6066
3121
3122  Epoch 07280: saving model to ./model/
        model_Epoch7280_val_mean_absolute_error3.607.h5
3123  epoch_end_callback epoch 7279 lr 3.125e-05
3124  Epoch 7281/10000
3125    - 0s - loss: 4.6119e-04 - mean_absolute_error: 0.0125 -
        val_loss: 32.0546 - val_mean_absolute_error: 3.6074
3126  epoch_end_callback epoch 7280 lr 3.125e-05
3127  Epoch 7282/10000
3128    - 0s - loss: 5.4585e-04 - mean_absolute_error: 0.0150 -
        val_loss: 32.1136 - val_mean_absolute_error: 3.6085
3129  epoch_end_callback epoch 7281 lr 3.125e-05
3130  Epoch 7283/10000
3131    - 0s - loss: 6.2558e-04 - mean_absolute_error: 0.0154 -
        val_loss: 32.1477 - val_mean_absolute_error: 3.6095
3132  epoch_end_callback epoch 7282 lr 3.125e-05
3133  Epoch 7284/10000
3134    - 0s - loss: 5.0598e-04 - mean_absolute_error: 0.0134 -
        val_loss: 32.0754 - val_mean_absolute_error: 3.6122
3135  epoch_end_callback epoch 7283 lr 3.125e-05
3136  Epoch 7285/10000
3137    - 0s - loss: 7.0729e-04 - mean_absolute_error: 0.0154 -
        val_loss: 32.0889 - val_mean_absolute_error: 3.6092
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3138 epoch_end_callback epoch 7284 lr 3.125e-05
3139 Epoch 7286/10000
3140  - 0s - loss: 4.9367e-04 - mean_absolute_error: 0.0117 -
     val_loss: 32.0555 - val_mean_absolute_error: 3.6075
3141 epoch_end_callback epoch 7285 lr 3.125e-05
3142 Epoch 7287/10000
3143  - 0s - loss: 4.6018e-04 - mean_absolute_error: 0.0130 -
     val_loss: 32.0496 - val_mean_absolute_error: 3.6097
3144 epoch_end_callback epoch 7286 lr 3.125e-05
3145 Epoch 7288/10000
3146  - 0s - loss: 5.8634e-04 - mean_absolute_error: 0.0161 -
     val_loss: 32.0571 - val_mean_absolute_error: 3.6082
3147 epoch_end_callback epoch 7287 lr 3.125e-05
3148 Epoch 7289/10000
3149  - 0s - loss: 6.5598e-04 - mean_absolute_error: 0.0136 -
     val_loss: 32.0589 - val_mean_absolute_error: 3.6084
3150 epoch_end_callback epoch 7288 lr 3.125e-05
3151 Epoch 7290/10000
3152  - 0s - loss: 4.6600e-04 - mean_absolute_error: 0.0128 -
     val_loss: 32.1212 - val_mean_absolute_error: 3.6094
3153
3154 Epoch 07290: saving model to ./model/
     model_Epoch7290_val_mean_absolute_error3.609.h5
3155 epoch_end_callback epoch 7289 lr 3.125e-05
3156 Epoch 7291/10000
3157  - 0s - loss: 5.3559e-04 - mean_absolute_error: 0.0132 -
     val_loss: 32.1151 - val_mean_absolute_error: 3.6068
3158 epoch_end_callback epoch 7290 lr 3.125e-05
3159 Epoch 7292/10000
3160  - 0s - loss: 5.3928e-04 - mean_absolute_error: 0.0130 -
     val_loss: 32.0261 - val_mean_absolute_error: 3.6047
3161 epoch_end_callback epoch 7291 lr 3.125e-05
3162 Epoch 7293/10000
3163  - 0s - loss: 6.0421e-04 - mean_absolute_error: 0.0153 -
     val_loss: 32.1271 - val_mean_absolute_error: 3.6100
3164 epoch_end_callback epoch 7292 lr 3.125e-05
3165 Epoch 7294/10000
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3166    - 0s - loss: 6.9537e-04 - mean_absolute_error: 0.0146 -
        val_loss: 32.0487 - val_mean_absolute_error: 3.6072
3167 epoch_end_callback epoch 7293 lr 3.125e-05
3168 Epoch 7295/10000
3169    - 0s - loss: 4.8113e-04 - mean_absolute_error: 0.0130 -
        val_loss: 32.0863 - val_mean_absolute_error: 3.6071
3170 epoch_end_callback epoch 7294 lr 3.125e-05
3171 Epoch 7296/10000
3172    - 0s - loss: 6.3257e-04 - mean_absolute_error: 0.0158 -
        val_loss: 32.0330 - val_mean_absolute_error: 3.6066
3173 epoch_end_callback epoch 7295 lr 3.125e-05
3174 Epoch 7297/10000
3175    - 0s - loss: 4.9295e-04 - mean_absolute_error: 0.0127 -
        val_loss: 32.0885 - val_mean_absolute_error: 3.6074
3176 epoch_end_callback epoch 7296 lr 3.125e-05
3177 Epoch 7298/10000
3178    - 0s - loss: 6.7346e-04 - mean_absolute_error: 0.0161 -
        val_loss: 32.0603 - val_mean_absolute_error: 3.6073
3179 epoch_end_callback epoch 7297 lr 3.125e-05
3180 Epoch 7299/10000
3181    - 0s - loss: 5.7202e-04 - mean_absolute_error: 0.0154 -
        val_loss: 32.0877 - val_mean_absolute_error: 3.6063
3182 epoch_end_callback epoch 7298 lr 3.125e-05
3183 Epoch 7300/10000
3184    - 0s - loss: 4.3515e-04 - mean_absolute_error: 0.0123 -
        val_loss: 32.0143 - val_mean_absolute_error: 3.6080
3185
3186 Epoch 07300: saving model to ./model/
        model_Epoch7300_val_mean_absolute_error3.608.h5
3187 epoch_end_callback epoch 7299 lr 3.125e-05
3188 Epoch 7301/10000
3189    - 0s - loss: 5.6380e-04 - mean_absolute_error: 0.0133 -
        val_loss: 32.1094 - val_mean_absolute_error: 3.6102
3190 epoch_end_callback epoch 7300 lr 3.125e-05
3191 Epoch 7302/10000
3192    - 0s - loss: 5.7431e-04 - mean_absolute_error: 0.0148 -
        val_loss: 32.0928 - val_mean_absolute_error: 3.6068
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3193 epoch_end_callback epoch 7301 lr 3.125e-05
3194 Epoch 7303/10000
3195  - 0s - loss: 5.6803e-04 - mean_absolute_error: 0.0131 -
     val_loss: 32.0264 - val_mean_absolute_error: 3.6083
3196 epoch_end_callback epoch 7302 lr 3.125e-05
3197 Epoch 7304/10000
3198  - 0s - loss: 5.7877e-04 - mean_absolute_error: 0.0144 -
     val_loss: 32.0268 - val_mean_absolute_error: 3.6103
3199 epoch_end_callback epoch 7303 lr 3.125e-05
3200 Epoch 7305/10000
3201  - 0s - loss: 5.1281e-04 - mean_absolute_error: 0.0138 -
     val_loss: 32.1071 - val_mean_absolute_error: 3.6073
3202 epoch_end_callback epoch 7304 lr 3.125e-05
3203 Epoch 7306/10000
3204  - 0s - loss: 5.6978e-04 - mean_absolute_error: 0.0139 -
     val_loss: 32.0754 - val_mean_absolute_error: 3.6073
3205 epoch_end_callback epoch 7305 lr 3.125e-05
3206 Epoch 7307/10000
3207  - 0s - loss: 5.5503e-04 - mean_absolute_error: 0.0145 -
     val_loss: 32.1006 - val_mean_absolute_error: 3.6076
3208 epoch_end_callback epoch 7306 lr 3.125e-05
3209 Epoch 7308/10000
3210  - 0s - loss: 5.1929e-04 - mean_absolute_error: 0.0140 -
     val_loss: 32.1365 - val_mean_absolute_error: 3.6116
3211 epoch_end_callback epoch 7307 lr 3.125e-05
3212 Epoch 7309/10000
3213  - 0s - loss: 5.9470e-04 - mean_absolute_error: 0.0142 -
     val_loss: 32.0897 - val_mean_absolute_error: 3.6097
3214 epoch_end_callback epoch 7308 lr 3.125e-05
3215 Epoch 7310/10000
3216  - 0s - loss: 5.3453e-04 - mean_absolute_error: 0.0128 -
     val_loss: 32.0781 - val_mean_absolute_error: 3.6112
3217
3218 Epoch 07310: saving model to ./model/
     model_Epoch7310_val_mean_absolute_error3.611.h5
3219 epoch_end_callback epoch 7309 lr 3.125e-05
3220 Epoch 7311/10000
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3221   - 0s - loss: 6.1509e-04 - mean_absolute_error: 0.0153 -
       val_loss: 32.0786 - val_mean_absolute_error: 3.6080
3222 epoch_end_callback epoch 7310 lr 3.125e-05
3223 Epoch 7312/10000
3224   - 0s - loss: 4.6720e-04 - mean_absolute_error: 0.0135 -
       val_loss: 32.1026 - val_mean_absolute_error: 3.6124
3225 epoch_end_callback epoch 7311 lr 3.125e-05
3226 Epoch 7313/10000
3227   - 0s - loss: 6.2045e-04 - mean_absolute_error: 0.0156 -
       val_loss: 32.0686 - val_mean_absolute_error: 3.6064
3228 epoch_end_callback epoch 7312 lr 3.125e-05
3229 Epoch 7314/10000
3230   - 0s - loss: 5.4488e-04 - mean_absolute_error: 0.0138 -
       val_loss: 32.1209 - val_mean_absolute_error: 3.6063
3231 epoch_end_callback epoch 7313 lr 3.125e-05
3232 Epoch 7315/10000
3233   - 0s - loss: 5.4049e-04 - mean_absolute_error: 0.0132 -
       val_loss: 32.0206 - val_mean_absolute_error: 3.6054
3234 epoch_end_callback epoch 7314 lr 3.125e-05
3235 Epoch 7316/10000
3236   - 0s - loss: 6.0455e-04 - mean_absolute_error: 0.0148 -
       val_loss: 32.0544 - val_mean_absolute_error: 3.6062
3237 epoch_end_callback epoch 7315 lr 3.125e-05
3238 Epoch 7317/10000
3239   - 0s - loss: 4.7957e-04 - mean_absolute_error: 0.0126 -
       val_loss: 32.0452 - val_mean_absolute_error: 3.6069
3240 epoch_end_callback epoch 7316 lr 3.125e-05
3241 Epoch 7318/10000
3242   - 0s - loss: 4.4793e-04 - mean_absolute_error: 0.0133 -
       val_loss: 32.0289 - val_mean_absolute_error: 3.6044
3243 epoch_end_callback epoch 7317 lr 3.125e-05
3244 Epoch 7319/10000
3245   - 0s - loss: 6.7499e-04 - mean_absolute_error: 0.0148 -
       val_loss: 32.0539 - val_mean_absolute_error: 3.6084
3246 epoch_end_callback epoch 7318 lr 3.125e-05
3247 Epoch 7320/10000
3248   - 0s - loss: 6.3219e-04 - mean_absolute_error: 0.0155 -
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3248  val_loss: 32.0906 - val_mean_absolute_error: 3.6080
3249
3250  Epoch 07320: saving model to ./model/
      model_Epoch7320_val_mean_absolute_error3.608.h5
3251  epoch_end_callback epoch 7319 lr 3.125e-05
3252  Epoch 7321/10000
3253   - 0s - loss: 5.2478e-04 - mean_absolute_error: 0.0136 -
      val_loss: 32.0517 - val_mean_absolute_error: 3.6073
3254  epoch_end_callback epoch 7320 lr 3.125e-05
3255  Epoch 7322/10000
3256   - 0s - loss: 4.9220e-04 - mean_absolute_error: 0.0129 -
      val_loss: 32.1197 - val_mean_absolute_error: 3.6077
3257  epoch_end_callback epoch 7321 lr 3.125e-05
3258  Epoch 7323/10000
3259   - 0s - loss: 6.2893e-04 - mean_absolute_error: 0.0152 -
      val_loss: 31.9791 - val_mean_absolute_error: 3.6047
3260  epoch_end_callback epoch 7322 lr 3.125e-05
3261  Epoch 7324/10000
3262   - 0s - loss: 6.1125e-04 - mean_absolute_error: 0.0125 -
      val_loss: 32.0975 - val_mean_absolute_error: 3.6099
3263  epoch_end_callback epoch 7323 lr 3.125e-05
3264  Epoch 7325/10000
3265   - 0s - loss: 5.6369e-04 - mean_absolute_error: 0.0144 -
      val_loss: 32.0892 - val_mean_absolute_error: 3.6082
3266  epoch_end_callback epoch 7324 lr 3.125e-05
3267  Epoch 7326/10000
3268   - 0s - loss: 5.1629e-04 - mean_absolute_error: 0.0135 -
      val_loss: 32.0844 - val_mean_absolute_error: 3.6120
3269  epoch_end_callback epoch 7325 lr 3.125e-05
3270  Epoch 7327/10000
3271   - 0s - loss: 5.6900e-04 - mean_absolute_error: 0.0138 -
      val_loss: 32.0666 - val_mean_absolute_error: 3.6070
3272  epoch_end_callback epoch 7326 lr 3.125e-05
3273  Epoch 7328/10000
3274   - 0s - loss: 6.5863e-04 - mean_absolute_error: 0.0160 -
      val_loss: 32.0771 - val_mean_absolute_error: 3.6075
3275  epoch_end_callback epoch 7327 lr 3.125e-05
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3276  Epoch 7329/10000
3277   - 0s - loss: 4.1212e-04 - mean_absolute_error: 0.0120 -
      val_loss: 32.0630 - val_mean_absolute_error: 3.6063
3278  epoch_end_callback epoch 7328 lr 3.125e-05
3279  Epoch 7330/10000
3280   - 0s - loss: 5.8462e-04 - mean_absolute_error: 0.0160 -
      val_loss: 32.0438 - val_mean_absolute_error: 3.6050
3281
3282  Epoch 07330: saving model to ./model/
      model_Epoch7330_val_mean_absolute_error3.605.h5
3283  epoch_end_callback epoch 7329 lr 3.125e-05
3284  Epoch 7331/10000
3285   - 0s - loss: 5.0452e-04 - mean_absolute_error: 0.0122 -
      val_loss: 32.0425 - val_mean_absolute_error: 3.6057
3286  epoch_end_callback epoch 7330 lr 3.125e-05
3287  Epoch 7332/10000
3288   - 0s - loss: 6.1599e-04 - mean_absolute_error: 0.0156 -
      val_loss: 32.0832 - val_mean_absolute_error: 3.6119
3289  epoch_end_callback epoch 7331 lr 3.125e-05
3290  Epoch 7333/10000
3291   - 0s - loss: 4.6549e-04 - mean_absolute_error: 0.0129 -
      val_loss: 32.1026 - val_mean_absolute_error: 3.6067
3292  epoch_end_callback epoch 7332 lr 3.125e-05
3293  Epoch 7334/10000
3294   - 0s - loss: 6.3457e-04 - mean_absolute_error: 0.0156 -
      val_loss: 32.0814 - val_mean_absolute_error: 3.6074
3295  epoch_end_callback epoch 7333 lr 3.125e-05
3296  Epoch 7335/10000
3297   - 0s - loss: 4.8640e-04 - mean_absolute_error: 0.0131 -
      val_loss: 32.0987 - val_mean_absolute_error: 3.6098
3298  epoch_end_callback epoch 7334 lr 3.125e-05
3299  Epoch 7336/10000
3300   - 0s - loss: 5.6371e-04 - mean_absolute_error: 0.0144 -
      val_loss: 32.0760 - val_mean_absolute_error: 3.6108
3301  epoch_end_callback epoch 7335 lr 3.125e-05
3302  Epoch 7337/10000
3303   - 0s - loss: 3.5309e-04 - mean_absolute_error: 0.0093 -
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3303  val_loss: 32.0898 - val_mean_absolute_error: 3.6084
3304  epoch_end_callback epoch 7336 lr 1.5625e-05
3305  Epoch 7338/10000
3306   - 0s - loss: 3.3863e-04 - mean_absolute_error: 0.0089 -
      val_loss: 32.0666 - val_mean_absolute_error: 3.6058
3307  epoch_end_callback epoch 7337 lr 1.5625e-05
3308  Epoch 7339/10000
3309   - 0s - loss: 3.2093e-04 - mean_absolute_error: 0.0083 -
      val_loss: 32.0768 - val_mean_absolute_error: 3.6075
3310  epoch_end_callback epoch 7338 lr 1.5625e-05
3311  Epoch 7340/10000
3312   - 0s - loss: 3.4463e-04 - mean_absolute_error: 0.0085 -
      val_loss: 32.0711 - val_mean_absolute_error: 3.6071
3313
3314  Epoch 07340: saving model to ./model/
      model_Epoch7340_val_mean_absolute_error3.607.h5
3315  epoch_end_callback epoch 7339 lr 1.5625e-05
3316  Epoch 7341/10000
3317   - 0s - loss: 3.2387e-04 - mean_absolute_error: 0.0074 -
      val_loss: 32.0989 - val_mean_absolute_error: 3.6085
3318  epoch_end_callback epoch 7340 lr 1.5625e-05
3319  Epoch 7342/10000
3320   - 0s - loss: 3.1847e-04 - mean_absolute_error: 0.0082 -
      val_loss: 32.0331 - val_mean_absolute_error: 3.6060
3321  epoch_end_callback epoch 7341 lr 1.5625e-05
3322  Epoch 7343/10000
3323   - 0s - loss: 3.5972e-04 - mean_absolute_error: 0.0076 -
      val_loss: 32.0838 - val_mean_absolute_error: 3.6085
3324  epoch_end_callback epoch 7342 lr 1.5625e-05
3325  Epoch 7344/10000
3326   - 0s - loss: 3.1016e-04 - mean_absolute_error: 0.0073 -
      val_loss: 32.0685 - val_mean_absolute_error: 3.6070
3327  epoch_end_callback epoch 7343 lr 1.5625e-05
3328  Epoch 7345/10000
3329   - 0s - loss: 3.3597e-04 - mean_absolute_error: 0.0087 -
      val_loss: 32.0790 - val_mean_absolute_error: 3.6076
3330  epoch_end_callback epoch 7344 lr 1.5625e-05
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3331 Epoch 7346/10000
3332  - 0s - loss: 3.4552e-04 - mean_absolute_error: 0.0077 -
     val_loss: 32.0927 - val_mean_absolute_error: 3.6096
3333 epoch_end_callback epoch 7345 lr 1.5625e-05
3334 Epoch 7347/10000
3335  - 0s - loss: 3.7815e-04 - mean_absolute_error: 0.0076 -
     val_loss: 32.0778 - val_mean_absolute_error: 3.6095
3336 epoch_end_callback epoch 7346 lr 1.5625e-05
3337 Epoch 7348/10000
3338  - 0s - loss: 3.2984e-04 - mean_absolute_error: 0.0078 -
     val_loss: 32.0948 - val_mean_absolute_error: 3.6088
3339 epoch_end_callback epoch 7347 lr 1.5625e-05
3340 Epoch 7349/10000
3341  - 0s - loss: 3.0487e-04 - mean_absolute_error: 0.0080 -
     val_loss: 32.1029 - val_mean_absolute_error: 3.6084
3342 epoch_end_callback epoch 7348 lr 1.5625e-05
3343 Epoch 7350/10000
3344  - 0s - loss: 3.3396e-04 - mean_absolute_error: 0.0087 -
     val_loss: 32.1001 - val_mean_absolute_error: 3.6084
3345
3346 Epoch 07350: saving model to ./model/
     model_Epoch7350_val_mean_absolute_error3.608.h5
3347 epoch_end_callback epoch 7349 lr 1.5625e-05
3348 Epoch 7351/10000
3349  - 0s - loss: 3.2697e-04 - mean_absolute_error: 0.0076 -
     val_loss: 32.0568 - val_mean_absolute_error: 3.6069
3350 epoch_end_callback epoch 7350 lr 1.5625e-05
3351 Epoch 7352/10000
3352  - 0s - loss: 3.0909e-04 - mean_absolute_error: 0.0076 -
     val_loss: 32.1006 - val_mean_absolute_error: 3.6083
3353 epoch_end_callback epoch 7351 lr 1.5625e-05
3354 Epoch 7353/10000
3355  - 0s - loss: 3.2621e-04 - mean_absolute_error: 0.0085 -
     val_loss: 32.0853 - val_mean_absolute_error: 3.6080
3356 epoch_end_callback epoch 7352 lr 1.5625e-05
3357 Epoch 7354/10000
3358  - 0s - loss: 3.3540e-04 - mean_absolute_error: 0.0081 -
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3358  val_loss: 32.0970 - val_mean_absolute_error: 3.6092
3359  epoch_end_callback epoch 7353 lr 1.5625e-05
3360  Epoch 7355/10000
3361   - 0s - loss: 3.3604e-04 - mean_absolute_error: 0.0079 -
      val_loss: 32.0968 - val_mean_absolute_error: 3.6084
3362  epoch_end_callback epoch 7354 lr 1.5625e-05
3363  Epoch 7356/10000
3364   - 0s - loss: 3.1942e-04 - mean_absolute_error: 0.0071 -
      val_loss: 32.0571 - val_mean_absolute_error: 3.6072
3365  epoch_end_callback epoch 7355 lr 1.5625e-05
3366  Epoch 7357/10000
3367   - 0s - loss: 3.4154e-04 - mean_absolute_error: 0.0089 -
      val_loss: 32.0967 - val_mean_absolute_error: 3.6085
3368  epoch_end_callback epoch 7356 lr 1.5625e-05
3369  Epoch 7358/10000
3370   - 0s - loss: 3.1047e-04 - mean_absolute_error: 0.0075 -
      val_loss: 32.0879 - val_mean_absolute_error: 3.6085
3371  epoch_end_callback epoch 7357 lr 1.5625e-05
3372  Epoch 7359/10000
3373   - 0s - loss: 3.4922e-04 - mean_absolute_error: 0.0078 -
      val_loss: 32.0666 - val_mean_absolute_error: 3.6075
3374  epoch_end_callback epoch 7358 lr 1.5625e-05
3375  Epoch 7360/10000
3376   - 0s - loss: 3.1638e-04 - mean_absolute_error: 0.0075 -
      val_loss: 32.0871 - val_mean_absolute_error: 3.6093
3377
3378  Epoch 07360: saving model to ./model/
      model_Epoch7360_val_mean_absolute_error3.609.h5
3379  epoch_end_callback epoch 7359 lr 1.5625e-05
3380  Epoch 7361/10000
3381   - 0s - loss: 3.2697e-04 - mean_absolute_error: 0.0087 -
      val_loss: 32.0837 - val_mean_absolute_error: 3.6089
3382  epoch_end_callback epoch 7360 lr 1.5625e-05
3383  Epoch 7362/10000
3384   - 0s - loss: 3.3743e-04 - mean_absolute_error: 0.0084 -
      val_loss: 32.0946 - val_mean_absolute_error: 3.6098
3385  epoch_end_callback epoch 7361 lr 1.5625e-05
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3386  Epoch 7363/10000
3387   - 0s - loss: 3.5334e-04 - mean_absolute_error: 0.0083 -
      val_loss: 32.0839 - val_mean_absolute_error: 3.6079
3388  epoch_end_callback epoch 7362 lr 1.5625e-05
3389  Epoch 7364/10000
3390   - 0s - loss: 3.4881e-04 - mean_absolute_error: 0.0079 -
      val_loss: 32.0919 - val_mean_absolute_error: 3.6091
3391  epoch_end_callback epoch 7363 lr 1.5625e-05
3392  Epoch 7365/10000
3393   - 0s - loss: 3.1305e-04 - mean_absolute_error: 0.0078 -
      val_loss: 32.0817 - val_mean_absolute_error: 3.6087
3394  epoch_end_callback epoch 7364 lr 1.5625e-05
3395  Epoch 7366/10000
3396   - 0s - loss: 3.2712e-04 - mean_absolute_error: 0.0078 -
      val_loss: 32.1089 - val_mean_absolute_error: 3.6075
3397  epoch_end_callback epoch 7365 lr 1.5625e-05
3398  Epoch 7367/10000
3399   - 0s - loss: 2.9762e-04 - mean_absolute_error: 0.0078 -
      val_loss: 32.0915 - val_mean_absolute_error: 3.6113
3400  epoch_end_callback epoch 7366 lr 1.5625e-05
3401  Epoch 7368/10000
3402   - 0s - loss: 3.4607e-04 - mean_absolute_error: 0.0080 -
      val_loss: 32.0785 - val_mean_absolute_error: 3.6083
3403  epoch_end_callback epoch 7367 lr 1.5625e-05
3404  Epoch 7369/10000
3405   - 0s - loss: 3.4361e-04 - mean_absolute_error: 0.0071 -
      val_loss: 32.0957 - val_mean_absolute_error: 3.6085
3406  epoch_end_callback epoch 7368 lr 1.5625e-05
3407  Epoch 7370/10000
3408   - 0s - loss: 3.0799e-04 - mean_absolute_error: 0.0077 -
      val_loss: 32.0872 - val_mean_absolute_error: 3.6096
3409
3410  Epoch 07370: saving model to ./model/
      model_Epoch7370_val_mean_absolute_error3.610.h5
3411  epoch_end_callback epoch 7369 lr 1.5625e-05
3412  Epoch 7371/10000
3413   - 0s - loss: 2.9373e-04 - mean_absolute_error: 0.0081 -
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3413 val_loss: 32.0515 - val_mean_absolute_error: 3.6053

3414 epoch_end_callback epoch 7370 lr 1.5625e-05

3415 Epoch 7372/10000

3416 - 0s - loss: 3.4679e-04 - mean_absolute_error: 0.0081 - val_loss: 32.0820 - val_mean_absolute_error: 3.6096

3417 epoch_end_callback epoch 7371 lr 1.5625e-05

3418 Epoch 7373/10000

3419 - 0s - loss: 3.1811e-04 - mean_absolute_error: 0.0074 - val_loss: 32.0373 - val_mean_absolute_error: 3.6069

3420 epoch_end_callback epoch 7372 lr 1.5625e-05

3421 Epoch 7374/10000

3422 - 0s - loss: 2.6420e-04 - mean_absolute_error: 0.0065 - val_loss: 32.0698 - val_mean_absolute_error: 3.6077

3423 epoch_end_callback epoch 7373 lr 1.5625e-05

3424 Epoch 7375/10000

3425 - 0s - loss: 3.4885e-04 - mean_absolute_error: 0.0090 - val_loss: 32.1001 - val_mean_absolute_error: 3.6093

3426 epoch_end_callback epoch 7374 lr 1.5625e-05

3427 Epoch 7376/10000

3428 - 0s - loss: 3.3914e-04 - mean_absolute_error: 0.0087 - val_loss: 32.0998 - val_mean_absolute_error: 3.6086

3429 epoch_end_callback epoch 7375 lr 1.5625e-05

3430 Epoch 7377/10000

3431 - 0s - loss: 3.2317e-04 - mean_absolute_error: 0.0085 - val_loss: 32.0898 - val_mean_absolute_error: 3.6090

3432 epoch_end_callback epoch 7376 lr 1.5625e-05

3433 Epoch 7378/10000

3434 - 0s - loss: 3.0116e-04 - mean_absolute_error: 0.0079 - val_loss: 32.0733 - val_mean_absolute_error: 3.6079

3435 epoch_end_callback epoch 7377 lr 1.5625e-05

3436 Epoch 7379/10000

3437 - 0s - loss: 2.6251e-04 - mean_absolute_error: 0.0068 - val_loss: 32.0828 - val_mean_absolute_error: 3.6076

3438 epoch_end_callback epoch 7378 lr 1.5625e-05

3439 Epoch 7380/10000

3440 - 0s - loss: 3.3767e-04 - mean_absolute_error: 0.0091 - val_loss: 32.0732 - val_mean_absolute_error: 3.6083

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3441
3442 Epoch 07380: saving model to ./model/
     model_Epoch7380_val_mean_absolute_error3.608.h5
3443 epoch_end_callback epoch 7379 lr 1.5625e-05
3444 Epoch 7381/10000
3445  - 0s - loss: 3.1485e-04 - mean_absolute_error: 0.0077 -
     val_loss: 32.1003 - val_mean_absolute_error: 3.6103
3446 epoch_end_callback epoch 7380 lr 1.5625e-05
3447 Epoch 7382/10000
3448  - 0s - loss: 3.2347e-04 - mean_absolute_error: 0.0072 -
     val_loss: 32.0859 - val_mean_absolute_error: 3.6091
3449 epoch_end_callback epoch 7381 lr 1.5625e-05
3450 Epoch 7383/10000
3451  - 0s - loss: 3.2772e-04 - mean_absolute_error: 0.0080 -
     val_loss: 32.0945 - val_mean_absolute_error: 3.6092
3452 epoch_end_callback epoch 7382 lr 1.5625e-05
3453 Epoch 7384/10000
3454  - 0s - loss: 3.1969e-04 - mean_absolute_error: 0.0078 -
     val_loss: 32.0790 - val_mean_absolute_error: 3.6088
3455 epoch_end_callback epoch 7383 lr 1.5625e-05
3456 Epoch 7385/10000
3457  - 0s - loss: 3.5070e-04 - mean_absolute_error: 0.0076 -
     val_loss: 32.0897 - val_mean_absolute_error: 3.6080
3458 epoch_end_callback epoch 7384 lr 1.5625e-05
3459 Epoch 7386/10000
3460  - 0s - loss: 3.0881e-04 - mean_absolute_error: 0.0078 -
     val_loss: 32.0978 - val_mean_absolute_error: 3.6111
3461 epoch_end_callback epoch 7385 lr 1.5625e-05
3462 Epoch 7387/10000
3463  - 0s - loss: 3.2449e-04 - mean_absolute_error: 0.0084 -
     val_loss: 32.0990 - val_mean_absolute_error: 3.6096
3464 epoch_end_callback epoch 7386 lr 1.5625e-05
3465 Epoch 7388/10000
3466  - 0s - loss: 3.3858e-04 - mean_absolute_error: 0.0072 -
     val_loss: 32.0993 - val_mean_absolute_error: 3.6097
3467 epoch_end_callback epoch 7387 lr 1.5625e-05
3468 Epoch 7389/10000
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3469   - 0s - loss: 3.0605e-04 - mean_absolute_error: 0.0077 -
       val_loss: 32.0881 - val_mean_absolute_error: 3.6072
3470   epoch_end_callback epoch 7388 lr 1.5625e-05
3471   Epoch 7390/10000
3472   - 0s - loss: 3.3011e-04 - mean_absolute_error: 0.0084 -
       val_loss: 32.0868 - val_mean_absolute_error: 3.6087
3473
3474   Epoch 07390: saving model to ./model/
       model_Epoch7390_val_mean_absolute_error3.609.h5
3475   epoch_end_callback epoch 7389 lr 1.5625e-05
3476   Epoch 7391/10000
3477   - 0s - loss: 3.0083e-04 - mean_absolute_error: 0.0079 -
       val_loss: 32.0920 - val_mean_absolute_error: 3.6093
3478   epoch_end_callback epoch 7390 lr 1.5625e-05
3479   Epoch 7392/10000
3480   - 0s - loss: 2.7578e-04 - mean_absolute_error: 0.0075 -
       val_loss: 32.0917 - val_mean_absolute_error: 3.6088
3481   epoch_end_callback epoch 7391 lr 1.5625e-05
3482   Epoch 7393/10000
3483   - 0s - loss: 3.6829e-04 - mean_absolute_error: 0.0086 -
       val_loss: 32.0907 - val_mean_absolute_error: 3.6093
3484   epoch_end_callback epoch 7392 lr 1.5625e-05
3485   Epoch 7394/10000
3486   - 0s - loss: 3.2238e-04 - mean_absolute_error: 0.0074 -
       val_loss: 32.0837 - val_mean_absolute_error: 3.6083
3487   epoch_end_callback epoch 7393 lr 1.5625e-05
3488   Epoch 7395/10000
3489   - 0s - loss: 3.2643e-04 - mean_absolute_error: 0.0078 -
       val_loss: 32.0767 - val_mean_absolute_error: 3.6079
3490   epoch_end_callback epoch 7394 lr 1.5625e-05
3491   Epoch 7396/10000
3492   - 0s - loss: 3.3184e-04 - mean_absolute_error: 0.0071 -
       val_loss: 32.1194 - val_mean_absolute_error: 3.6104
3493   epoch_end_callback epoch 7395 lr 1.5625e-05
3494   Epoch 7397/10000
3495   - 0s - loss: 3.2612e-04 - mean_absolute_error: 0.0086 -
       val_loss: 32.0342 - val_mean_absolute_error: 3.6075
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3496  epoch_end_callback epoch 7396 lr 1.5625e-05
3497  Epoch 7398/10000
3498   - 0s - loss: 3.1559e-04 - mean_absolute_error: 0.0079 -
      val_loss: 32.0803 - val_mean_absolute_error: 3.6089
3499  epoch_end_callback epoch 7397 lr 1.5625e-05
3500  Epoch 7399/10000
3501   - 0s - loss: 2.9747e-04 - mean_absolute_error: 0.0068 -
      val_loss: 32.0807 - val_mean_absolute_error: 3.6085
3502  epoch_end_callback epoch 7398 lr 1.5625e-05
3503  Epoch 7400/10000
3504   - 0s - loss: 3.6087e-04 - mean_absolute_error: 0.0086 -
      val_loss: 32.0872 - val_mean_absolute_error: 3.6080
3505
3506  Epoch 07400: saving model to ./model/
      model_Epoch7400_val_mean_absolute_error3.608.h5
3507  epoch_end_callback epoch 7399 lr 1.5625e-05
3508  Epoch 7401/10000
3509   - 0s - loss: 3.0209e-04 - mean_absolute_error: 0.0073 -
      val_loss: 32.0735 - val_mean_absolute_error: 3.6073
3510  epoch_end_callback epoch 7400 lr 1.5625e-05
3511  Epoch 7402/10000
3512   - 0s - loss: 3.3085e-04 - mean_absolute_error: 0.0081 -
      val_loss: 32.0859 - val_mean_absolute_error: 3.6076
3513  epoch_end_callback epoch 7401 lr 1.5625e-05
3514  Epoch 7403/10000
3515   - 0s - loss: 2.9968e-04 - mean_absolute_error: 0.0074 -
      val_loss: 32.1332 - val_mean_absolute_error: 3.6103
3516  epoch_end_callback epoch 7402 lr 1.5625e-05
3517  Epoch 7404/10000
3518   - 0s - loss: 3.2352e-04 - mean_absolute_error: 0.0082 -
      val_loss: 32.0672 - val_mean_absolute_error: 3.6082
3519  epoch_end_callback epoch 7403 lr 1.5625e-05
3520  Epoch 7405/10000
3521   - 0s - loss: 3.1428e-04 - mean_absolute_error: 0.0075 -
      val_loss: 32.0842 - val_mean_absolute_error: 3.6099
3522  epoch_end_callback epoch 7404 lr 1.5625e-05
3523  Epoch 7406/10000
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3524   - 0s - loss: 3.1978e-04 - mean_absolute_error: 0.0077 -
       val_loss: 32.0299 - val_mean_absolute_error: 3.6067
3525 epoch_end_callback epoch 7405 lr 1.5625e-05
3526 Epoch 7407/10000
3527   - 0s - loss: 3.2478e-04 - mean_absolute_error: 0.0079 -
       val_loss: 32.0801 - val_mean_absolute_error: 3.6108
3528 epoch_end_callback epoch 7406 lr 1.5625e-05
3529 Epoch 7408/10000
3530   - 0s - loss: 2.9988e-04 - mean_absolute_error: 0.0077 -
       val_loss: 32.0860 - val_mean_absolute_error: 3.6098
3531 epoch_end_callback epoch 7407 lr 1.5625e-05
3532 Epoch 7409/10000
3533   - 0s - loss: 3.6693e-04 - mean_absolute_error: 0.0090 -
       val_loss: 32.0710 - val_mean_absolute_error: 3.6092
3534 epoch_end_callback epoch 7408 lr 1.5625e-05
3535 Epoch 7410/10000
3536   - 0s - loss: 2.9430e-04 - mean_absolute_error: 0.0073 -
       val_loss: 32.0941 - val_mean_absolute_error: 3.6102
3537
3538 Epoch 07410: saving model to ./model/
       model_Epoch7410_val_mean_absolute_error3.610.h5
3539 epoch_end_callback epoch 7409 lr 1.5625e-05
3540 Epoch 7411/10000
3541   - 0s - loss: 3.1941e-04 - mean_absolute_error: 0.0079 -
       val_loss: 32.0870 - val_mean_absolute_error: 3.6084
3542 epoch_end_callback epoch 7410 lr 1.5625e-05
3543 Epoch 7412/10000
3544   - 0s - loss: 2.8834e-04 - mean_absolute_error: 0.0071 -
       val_loss: 32.1036 - val_mean_absolute_error: 3.6093
3545 epoch_end_callback epoch 7411 lr 1.5625e-05
3546 Epoch 7413/10000
3547   - 0s - loss: 3.0475e-04 - mean_absolute_error: 0.0082 -
       val_loss: 32.0941 - val_mean_absolute_error: 3.6104
3548 epoch_end_callback epoch 7412 lr 1.5625e-05
3549 Epoch 7414/10000
3550   - 0s - loss: 3.2206e-04 - mean_absolute_error: 0.0082 -
       val_loss: 32.0712 - val_mean_absolute_error: 3.6087
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3551  epoch_end_callback epoch 7413 lr 1.5625e-05
3552  Epoch 7415/10000
3553   - 0s - loss: 3.0161e-04 - mean_absolute_error: 0.0075 -
      val_loss: 32.0732 - val_mean_absolute_error: 3.6089
3554  epoch_end_callback epoch 7414 lr 1.5625e-05
3555  Epoch 7416/10000
3556   - 0s - loss: 3.2141e-04 - mean_absolute_error: 0.0088 -
      val_loss: 32.1407 - val_mean_absolute_error: 3.6114
3557  epoch_end_callback epoch 7415 lr 1.5625e-05
3558  Epoch 7417/10000
3559   - 0s - loss: 3.3566e-04 - mean_absolute_error: 0.0079 -
      val_loss: 32.0818 - val_mean_absolute_error: 3.6088
3560  epoch_end_callback epoch 7416 lr 1.5625e-05
3561  Epoch 7418/10000
3562   - 0s - loss: 3.1448e-04 - mean_absolute_error: 0.0073 -
      val_loss: 32.0888 - val_mean_absolute_error: 3.6092
3563  epoch_end_callback epoch 7417 lr 1.5625e-05
3564  Epoch 7419/10000
3565   - 0s - loss: 3.1273e-04 - mean_absolute_error: 0.0078 -
      val_loss: 32.0898 - val_mean_absolute_error: 3.6092
3566  epoch_end_callback epoch 7418 lr 1.5625e-05
3567  Epoch 7420/10000
3568   - 0s - loss: 3.2456e-04 - mean_absolute_error: 0.0078 -
      val_loss: 32.0814 - val_mean_absolute_error: 3.6074
3569
3570  Epoch 07420: saving model to ./model/
      model_Epoch7420_val_mean_absolute_error3.607.h5
3571  epoch_end_callback epoch 7419 lr 1.5625e-05
3572  Epoch 7421/10000
3573   - 0s - loss: 3.4476e-04 - mean_absolute_error: 0.0083 -
      val_loss: 32.0848 - val_mean_absolute_error: 3.6098
3574  epoch_end_callback epoch 7420 lr 1.5625e-05
3575  Epoch 7422/10000
3576   - 0s - loss: 3.2300e-04 - mean_absolute_error: 0.0084 -
      val_loss: 32.0929 - val_mean_absolute_error: 3.6097
3577  epoch_end_callback epoch 7421 lr 1.5625e-05
3578  Epoch 7423/10000
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3579    - 0s - loss: 3.1028e-04 - mean_absolute_error: 0.0078 -
        val_loss: 32.0816 - val_mean_absolute_error: 3.6097
3580  epoch_end_callback epoch 7422 lr 1.5625e-05
3581  Epoch 7424/10000
3582    - 0s - loss: 3.0561e-04 - mean_absolute_error: 0.0074 -
        val_loss: 32.0999 - val_mean_absolute_error: 3.6101
3583  epoch_end_callback epoch 7423 lr 1.5625e-05
3584  Epoch 7425/10000
3585    - 0s - loss: 3.4897e-04 - mean_absolute_error: 0.0089 -
        val_loss: 32.0652 - val_mean_absolute_error: 3.6086
3586  epoch_end_callback epoch 7424 lr 1.5625e-05
3587  Epoch 7426/10000
3588    - 0s - loss: 3.0725e-04 - mean_absolute_error: 0.0073 -
        val_loss: 32.0930 - val_mean_absolute_error: 3.6082
3589  epoch_end_callback epoch 7425 lr 1.5625e-05
3590  Epoch 7427/10000
3591    - 0s - loss: 3.1954e-04 - mean_absolute_error: 0.0083 -
        val_loss: 32.0776 - val_mean_absolute_error: 3.6088
3592  epoch_end_callback epoch 7426 lr 1.5625e-05
3593  Epoch 7428/10000
3594    - 0s - loss: 3.2475e-04 - mean_absolute_error: 0.0080 -
        val_loss: 32.0876 - val_mean_absolute_error: 3.6099
3595  epoch_end_callback epoch 7427 lr 1.5625e-05
3596  Epoch 7429/10000
3597    - 0s - loss: 2.9814e-04 - mean_absolute_error: 0.0069 -
        val_loss: 32.0614 - val_mean_absolute_error: 3.6070
3598  epoch_end_callback epoch 7428 lr 1.5625e-05
3599  Epoch 7430/10000
3600    - 0s - loss: 3.0561e-04 - mean_absolute_error: 0.0084 -
        val_loss: 32.1090 - val_mean_absolute_error: 3.6110
3601
3602  Epoch 07430: saving model to ./model/
        model_Epoch7430_val_mean_absolute_error3.611.h5
3603  epoch_end_callback epoch 7429 lr 1.5625e-05
3604  Epoch 7431/10000
3605    - 0s - loss: 3.3695e-04 - mean_absolute_error: 0.0080 -
        val_loss: 32.0877 - val_mean_absolute_error: 3.6064
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3606  epoch_end_callback epoch 7430 lr 1.5625e-05
3607  Epoch 7432/10000
3608   - 0s - loss: 3.2684e-04 - mean_absolute_error: 0.0073 -
      val_loss: 32.0727 - val_mean_absolute_error: 3.6088
3609  epoch_end_callback epoch 7431 lr 1.5625e-05
3610  Epoch 7433/10000
3611   - 0s - loss: 3.1844e-04 - mean_absolute_error: 0.0089 -
      val_loss: 32.0956 - val_mean_absolute_error: 3.6097
3612  epoch_end_callback epoch 7432 lr 1.5625e-05
3613  Epoch 7434/10000
3614   - 0s - loss: 3.1914e-04 - mean_absolute_error: 0.0076 -
      val_loss: 32.0740 - val_mean_absolute_error: 3.6095
3615  epoch_end_callback epoch 7433 lr 1.5625e-05
3616  Epoch 7435/10000
3617   - 0s - loss: 3.3912e-04 - mean_absolute_error: 0.0083 -
      val_loss: 32.1071 - val_mean_absolute_error: 3.6081
3618  epoch_end_callback epoch 7434 lr 1.5625e-05
3619  Epoch 7436/10000
3620   - 0s - loss: 3.3240e-04 - mean_absolute_error: 0.0083 -
      val_loss: 32.0873 - val_mean_absolute_error: 3.6077
3621  epoch_end_callback epoch 7435 lr 1.5625e-05
3622  Epoch 7437/10000
3623   - 0s - loss: 3.5054e-04 - mean_absolute_error: 0.0073 -
      val_loss: 32.0881 - val_mean_absolute_error: 3.6106
3624  epoch_end_callback epoch 7436 lr 1.5625e-05
3625  Epoch 7438/10000
3626   - 0s - loss: 2.9517e-04 - mean_absolute_error: 0.0072 -
      val_loss: 32.0907 - val_mean_absolute_error: 3.6089
3627  epoch_end_callback epoch 7437 lr 1.5625e-05
3628  Epoch 7439/10000
3629   - 0s - loss: 2.7425e-04 - mean_absolute_error: 0.0076 -
      val_loss: 32.0881 - val_mean_absolute_error: 3.6081
3630  epoch_end_callback epoch 7438 lr 1.5625e-05
3631  Epoch 7440/10000
3632   - 0s - loss: 3.5762e-04 - mean_absolute_error: 0.0089 -
      val_loss: 32.0953 - val_mean_absolute_error: 3.6098
3633
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3634  Epoch 07440: saving model to ./model/
      model_Epoch7440_val_mean_absolute_error3.610.h5
3635  epoch_end_callback epoch 7439 lr 1.5625e-05
3636  Epoch 7441/10000
3637   - 0s - loss: 3.1484e-04 - mean_absolute_error: 0.0082 -
      val_loss: 32.0485 - val_mean_absolute_error: 3.6077
3638  epoch_end_callback epoch 7440 lr 1.5625e-05
3639  Epoch 7442/10000
3640   - 0s - loss: 2.9829e-04 - mean_absolute_error: 0.0080 -
      val_loss: 32.0993 - val_mean_absolute_error: 3.6089
3641  epoch_end_callback epoch 7441 lr 1.5625e-05
3642  Epoch 7443/10000
3643   - 0s - loss: 3.1907e-04 - mean_absolute_error: 0.0080 -
      val_loss: 32.0944 - val_mean_absolute_error: 3.6087
3644  epoch_end_callback epoch 7442 lr 1.5625e-05
3645  Epoch 7444/10000
3646   - 0s - loss: 3.6776e-04 - mean_absolute_error: 0.0083 -
      val_loss: 32.0925 - val_mean_absolute_error: 3.6087
3647  epoch_end_callback epoch 7443 lr 1.5625e-05
3648  Epoch 7445/10000
3649   - 0s - loss: 2.8852e-04 - mean_absolute_error: 0.0076 -
      val_loss: 32.0883 - val_mean_absolute_error: 3.6089
3650  epoch_end_callback epoch 7444 lr 1.5625e-05
3651  Epoch 7446/10000
3652   - 0s - loss: 3.5801e-04 - mean_absolute_error: 0.0086 -
      val_loss: 32.0890 - val_mean_absolute_error: 3.6088
3653  epoch_end_callback epoch 7445 lr 1.5625e-05
3654  Epoch 7447/10000
3655   - 0s - loss: 3.1911e-04 - mean_absolute_error: 0.0076 -
      val_loss: 32.1081 - val_mean_absolute_error: 3.6097
3656  epoch_end_callback epoch 7446 lr 1.5625e-05
3657  Epoch 7448/10000
3658   - 0s - loss: 3.0000e-04 - mean_absolute_error: 0.0079 -
      val_loss: 32.0880 - val_mean_absolute_error: 3.6085
3659  epoch_end_callback epoch 7447 lr 1.5625e-05
3660  Epoch 7449/10000
3661   - 0s - loss: 3.3606e-04 - mean_absolute_error: 0.0084 -
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3661  val_loss: 32.0997 - val_mean_absolute_error: 3.6078
3662  epoch_end_callback epoch 7448 lr 1.5625e-05
3663  Epoch 7450/10000
3664   - 0s - loss: 3.4040e-04 - mean_absolute_error: 0.0072 -
      val_loss: 32.0595 - val_mean_absolute_error: 3.6069
3665
3666  Epoch 07450: saving model to ./model/
      model_Epoch7450_val_mean_absolute_error3.607.h5
3667  epoch_end_callback epoch 7449 lr 1.5625e-05
3668  Epoch 7451/10000
3669   - 0s - loss: 3.0396e-04 - mean_absolute_error: 0.0075 -
      val_loss: 32.0594 - val_mean_absolute_error: 3.6085
3670  epoch_end_callback epoch 7450 lr 1.5625e-05
3671  Epoch 7452/10000
3672   - 0s - loss: 2.9465e-04 - mean_absolute_error: 0.0075 -
      val_loss: 32.0881 - val_mean_absolute_error: 3.6080
3673  epoch_end_callback epoch 7451 lr 1.5625e-05
3674  Epoch 7453/10000
3675   - 0s - loss: 3.3128e-04 - mean_absolute_error: 0.0092 -
      val_loss: 32.0809 - val_mean_absolute_error: 3.6081
3676  epoch_end_callback epoch 7452 lr 1.5625e-05
3677  Epoch 7454/10000
3678   - 0s - loss: 2.8909e-04 - mean_absolute_error: 0.0067 -
      val_loss: 32.1113 - val_mean_absolute_error: 3.6088
3679  epoch_end_callback epoch 7453 lr 1.5625e-05
3680  Epoch 7455/10000
3681   - 0s - loss: 3.2452e-04 - mean_absolute_error: 0.0073 -
      val_loss: 32.1012 - val_mean_absolute_error: 3.6096
3682  epoch_end_callback epoch 7454 lr 1.5625e-05
3683  Epoch 7456/10000
3684   - 0s - loss: 3.5794e-04 - mean_absolute_error: 0.0085 -
      val_loss: 32.1175 - val_mean_absolute_error: 3.6100
3685  epoch_end_callback epoch 7455 lr 1.5625e-05
3686  Epoch 7457/10000
3687   - 0s - loss: 3.2051e-04 - mean_absolute_error: 0.0078 -
      val_loss: 32.0834 - val_mean_absolute_error: 3.6081
3688  epoch_end_callback epoch 7456 lr 1.5625e-05
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3689  Epoch 7458/10000
3690   - 0s - loss: 2.9300e-04 - mean_absolute_error: 0.0070 -
       val_loss: 32.1052 - val_mean_absolute_error: 3.6098
3691  epoch_end_callback epoch 7457 lr 1.5625e-05
3692  Epoch 7459/10000
3693   - 0s - loss: 3.5924e-04 - mean_absolute_error: 0.0085 -
       val_loss: 32.0947 - val_mean_absolute_error: 3.6091
3694  epoch_end_callback epoch 7458 lr 1.5625e-05
3695  Epoch 7460/10000
3696   - 0s - loss: 2.5838e-04 - mean_absolute_error: 0.0069 -
       val_loss: 32.1116 - val_mean_absolute_error: 3.6088
3697
3698  Epoch 07460: saving model to ./model/
       model_Epoch7460_val_mean_absolute_error3.609.h5
3699  epoch_end_callback epoch 7459 lr 1.5625e-05
3700  Epoch 7461/10000
3701   - 0s - loss: 3.6248e-04 - mean_absolute_error: 0.0093 -
       val_loss: 32.0639 - val_mean_absolute_error: 3.6067
3702  epoch_end_callback epoch 7460 lr 1.5625e-05
3703  Epoch 7462/10000
3704   - 0s - loss: 3.3313e-04 - mean_absolute_error: 0.0086 -
       val_loss: 32.0916 - val_mean_absolute_error: 3.6084
3705  epoch_end_callback epoch 7461 lr 1.5625e-05
3706  Epoch 7463/10000
3707   - 0s - loss: 3.0651e-04 - mean_absolute_error: 0.0078 -
       val_loss: 32.0678 - val_mean_absolute_error: 3.6084
3708  epoch_end_callback epoch 7462 lr 1.5625e-05
3709  Epoch 7464/10000
3710   - 0s - loss: 2.9529e-04 - mean_absolute_error: 0.0073 -
       val_loss: 32.0997 - val_mean_absolute_error: 3.6099
3711  epoch_end_callback epoch 7463 lr 1.5625e-05
3712  Epoch 7465/10000
3713   - 0s - loss: 3.1629e-04 - mean_absolute_error: 0.0087 -
       val_loss: 32.1046 - val_mean_absolute_error: 3.6096
3714  epoch_end_callback epoch 7464 lr 1.5625e-05
3715  Epoch 7466/10000
3716   - 0s - loss: 3.2456e-04 - mean_absolute_error: 0.0080 -
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3716  val_loss: 32.0893 - val_mean_absolute_error: 3.6079
3717  epoch_end_callback epoch 7465 lr 1.5625e-05
3718  Epoch 7467/10000
3719   - 0s - loss: 3.0565e-04 - mean_absolute_error: 0.0074 -
      val_loss: 32.0854 - val_mean_absolute_error: 3.6072
3720  epoch_end_callback epoch 7466 lr 1.5625e-05
3721  Epoch 7468/10000
3722   - 0s - loss: 3.2942e-04 - mean_absolute_error: 0.0076 -
      val_loss: 32.0722 - val_mean_absolute_error: 3.6080
3723  epoch_end_callback epoch 7467 lr 1.5625e-05
3724  Epoch 7469/10000
3725   - 0s - loss: 2.9080e-04 - mean_absolute_error: 0.0075 -
      val_loss: 32.1096 - val_mean_absolute_error: 3.6097
3726  epoch_end_callback epoch 7468 lr 1.5625e-05
3727  Epoch 7470/10000
3728   - 0s - loss: 3.4529e-04 - mean_absolute_error: 0.0082 -
      val_loss: 32.0846 - val_mean_absolute_error: 3.6088
3729
3730  Epoch 07470: saving model to ./model/
      model_Epoch7470_val_mean_absolute_error3.609.h5
3731  epoch_end_callback epoch 7469 lr 1.5625e-05
3732  Epoch 7471/10000
3733   - 0s - loss: 3.4439e-04 - mean_absolute_error: 0.0081 -
      val_loss: 32.0957 - val_mean_absolute_error: 3.6088
3734  epoch_end_callback epoch 7470 lr 1.5625e-05
3735  Epoch 7472/10000
3736   - 0s - loss: 3.0098e-04 - mean_absolute_error: 0.0073 -
      val_loss: 32.1054 - val_mean_absolute_error: 3.6084
3737  epoch_end_callback epoch 7471 lr 1.5625e-05
3738  Epoch 7473/10000
3739   - 0s - loss: 3.3657e-04 - mean_absolute_error: 0.0086 -
      val_loss: 32.1009 - val_mean_absolute_error: 3.6100
3740  epoch_end_callback epoch 7472 lr 1.5625e-05
3741  Epoch 7474/10000
3742   - 0s - loss: 3.2969e-04 - mean_absolute_error: 0.0085 -
      val_loss: 32.0865 - val_mean_absolute_error: 3.6081
3743  epoch_end_callback epoch 7473 lr 1.5625e-05
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3744  Epoch 7475/10000
3745   - 0s - loss: 2.4108e-04 - mean_absolute_error: 0.0062 -
       val_loss: 32.0888 - val_mean_absolute_error: 3.6100
3746  epoch_end_callback epoch 7474 lr 1.5625e-05
3747  Epoch 7476/10000
3748   - 0s - loss: 3.1371e-04 - mean_absolute_error: 0.0080 -
       val_loss: 32.1137 - val_mean_absolute_error: 3.6096
3749  epoch_end_callback epoch 7475 lr 1.5625e-05
3750  Epoch 7477/10000
3751   - 0s - loss: 3.0446e-04 - mean_absolute_error: 0.0079 -
       val_loss: 32.0747 - val_mean_absolute_error: 3.6076
3752  epoch_end_callback epoch 7476 lr 1.5625e-05
3753  Epoch 7478/10000
3754   - 0s - loss: 3.2416e-04 - mean_absolute_error: 0.0084 -
       val_loss: 32.0698 - val_mean_absolute_error: 3.6083
3755  epoch_end_callback epoch 7477 lr 1.5625e-05
3756  Epoch 7479/10000
3757   - 0s - loss: 2.8522e-04 - mean_absolute_error: 0.0075 -
       val_loss: 32.0925 - val_mean_absolute_error: 3.6089
3758  epoch_end_callback epoch 7478 lr 1.5625e-05
3759  Epoch 7480/10000
3760   - 0s - loss: 3.2608e-04 - mean_absolute_error: 0.0087 -
       val_loss: 32.0906 - val_mean_absolute_error: 3.6076
3761
3762  Epoch 07480: saving model to ./model/
       model_Epoch7480_val_mean_absolute_error3.608.h5
3763  epoch_end_callback epoch 7479 lr 1.5625e-05
3764  Epoch 7481/10000
3765   - 0s - loss: 3.0384e-04 - mean_absolute_error: 0.0073 -
       val_loss: 32.0670 - val_mean_absolute_error: 3.6077
3766  epoch_end_callback epoch 7480 lr 1.5625e-05
3767  Epoch 7482/10000
3768   - 0s - loss: 3.1102e-04 - mean_absolute_error: 0.0089 -
       val_loss: 32.1038 - val_mean_absolute_error: 3.6070
3769  epoch_end_callback epoch 7481 lr 1.5625e-05
3770  Epoch 7483/10000
3771   - 0s - loss: 3.3265e-04 - mean_absolute_error: 0.0080 -
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3771 val_loss: 32.0837 - val_mean_absolute_error: 3.6077
3772 epoch_end_callback epoch 7482 lr 1.5625e-05
3773 Epoch 7484/10000
3774  - 0s - loss: 3.1159e-04 - mean_absolute_error: 0.0081 -
     val_loss: 32.0950 - val_mean_absolute_error: 3.6097
3775 epoch_end_callback epoch 7483 lr 1.5625e-05
3776 Epoch 7485/10000
3777  - 0s - loss: 2.7922e-04 - mean_absolute_error: 0.0070 -
     val_loss: 32.0822 - val_mean_absolute_error: 3.6101
3778 epoch_end_callback epoch 7484 lr 1.5625e-05
3779 Epoch 7486/10000
3780  - 0s - loss: 3.1655e-04 - mean_absolute_error: 0.0088 -
     val_loss: 32.0968 - val_mean_absolute_error: 3.6101
3781 epoch_end_callback epoch 7485 lr 1.5625e-05
3782 Epoch 7487/10000
3783  - 0s - loss: 3.3402e-04 - mean_absolute_error: 0.0086 -
     val_loss: 32.1043 - val_mean_absolute_error: 3.6101
3784 epoch_end_callback epoch 7486 lr 1.5625e-05
3785 Epoch 7488/10000
3786  - 0s - loss: 3.1553e-04 - mean_absolute_error: 0.0074 -
     val_loss: 32.1011 - val_mean_absolute_error: 3.6092
3787 epoch_end_callback epoch 7487 lr 1.5625e-05
3788 Epoch 7489/10000
3789  - 0s - loss: 3.1995e-04 - mean_absolute_error: 0.0077 -
     val_loss: 32.0702 - val_mean_absolute_error: 3.6077
3790 epoch_end_callback epoch 7488 lr 1.5625e-05
3791 Epoch 7490/10000
3792  - 0s - loss: 3.3959e-04 - mean_absolute_error: 0.0075 -
     val_loss: 32.0887 - val_mean_absolute_error: 3.6083
3793
3794 Epoch 07490: saving model to ./model/
     model_Epoch7490_val_mean_absolute_error3.608.h5
3795 epoch_end_callback epoch 7489 lr 1.5625e-05
3796 Epoch 7491/10000
3797  - 0s - loss: 3.2404e-04 - mean_absolute_error: 0.0083 -
     val_loss: 32.0963 - val_mean_absolute_error: 3.6083
3798 epoch_end_callback epoch 7490 lr 1.5625e-05
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3799  Epoch 7492/10000
3800   - 0s - loss: 3.1441e-04 - mean_absolute_error: 0.0077 -
       val_loss: 32.0879 - val_mean_absolute_error: 3.6069
3801  epoch_end_callback epoch 7491 lr 1.5625e-05
3802  Epoch 7493/10000
3803   - 0s - loss: 3.2417e-04 - mean_absolute_error: 0.0079 -
       val_loss: 32.0666 - val_mean_absolute_error: 3.6057
3804  epoch_end_callback epoch 7492 lr 1.5625e-05
3805  Epoch 7494/10000
3806   - 0s - loss: 3.1807e-04 - mean_absolute_error: 0.0084 -
       val_loss: 32.1029 - val_mean_absolute_error: 3.6090
3807  epoch_end_callback epoch 7493 lr 1.5625e-05
3808  Epoch 7495/10000
3809   - 0s - loss: 3.5561e-04 - mean_absolute_error: 0.0080 -
       val_loss: 32.0730 - val_mean_absolute_error: 3.6073
3810  epoch_end_callback epoch 7494 lr 1.5625e-05
3811  Epoch 7496/10000
3812   - 0s - loss: 3.1277e-04 - mean_absolute_error: 0.0082 -
       val_loss: 32.0963 - val_mean_absolute_error: 3.6096
3813  epoch_end_callback epoch 7495 lr 1.5625e-05
3814  Epoch 7497/10000
3815   - 0s - loss: 2.9545e-04 - mean_absolute_error: 0.0074 -
       val_loss: 32.1177 - val_mean_absolute_error: 3.6090
3816  epoch_end_callback epoch 7496 lr 1.5625e-05
3817  Epoch 7498/10000
3818   - 0s - loss: 3.1405e-04 - mean_absolute_error: 0.0080 -
       val_loss: 32.1083 - val_mean_absolute_error: 3.6102
3819  epoch_end_callback epoch 7497 lr 1.5625e-05
3820  Epoch 7499/10000
3821   - 0s - loss: 3.1044e-04 - mean_absolute_error: 0.0081 -
       val_loss: 32.1057 - val_mean_absolute_error: 3.6091
3822  epoch_end_callback epoch 7498 lr 1.5625e-05
3823  Epoch 7500/10000
3824   - 0s - loss: 2.8596e-04 - mean_absolute_error: 0.0082 -
       val_loss: 32.0956 - val_mean_absolute_error: 3.6092
3825
3826  Epoch 07500: saving model to ./model/
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3826  model_Epoch7500_val_mean_absolute_error3.609.h5
3827  epoch_end_callback epoch 7499 lr 1.5625e-05
3828  Epoch 7501/10000
3829   - 0s - loss: 3.0415e-04 - mean_absolute_error: 0.0074 -
      val_loss: 32.0632 - val_mean_absolute_error: 3.6071
3830  epoch_end_callback epoch 7500 lr 1.5625e-05
3831  Epoch 7502/10000
3832   - 0s - loss: 3.2484e-04 - mean_absolute_error: 0.0075 -
      val_loss: 32.0994 - val_mean_absolute_error: 3.6101
3833  epoch_end_callback epoch 7501 lr 1.5625e-05
3834  Epoch 7503/10000
3835   - 0s - loss: 2.7441e-04 - mean_absolute_error: 0.0069 -
      val_loss: 32.0873 - val_mean_absolute_error: 3.6093
3836  epoch_end_callback epoch 7502 lr 1.5625e-05
3837  Epoch 7504/10000
3838   - 0s - loss: 3.1905e-04 - mean_absolute_error: 0.0083 -
      val_loss: 32.0821 - val_mean_absolute_error: 3.6084
3839  epoch_end_callback epoch 7503 lr 1.5625e-05
3840  Epoch 7505/10000
3841   - 0s - loss: 2.9239e-04 - mean_absolute_error: 0.0072 -
      val_loss: 32.0624 - val_mean_absolute_error: 3.6083
3842  epoch_end_callback epoch 7504 lr 1.5625e-05
3843  Epoch 7506/10000
3844   - 0s - loss: 2.6169e-04 - mean_absolute_error: 0.0075 -
      val_loss: 32.0781 - val_mean_absolute_error: 3.6086
3845  epoch_end_callback epoch 7505 lr 1.5625e-05
3846  Epoch 7507/10000
3847   - 0s - loss: 3.3870e-04 - mean_absolute_error: 0.0088 -
      val_loss: 32.0802 - val_mean_absolute_error: 3.6095
3848  epoch_end_callback epoch 7506 lr 1.5625e-05
3849  Epoch 7508/10000
3850   - 0s - loss: 2.6128e-04 - mean_absolute_error: 0.0073 -
      val_loss: 32.0801 - val_mean_absolute_error: 3.6078
3851  epoch_end_callback epoch 7507 lr 1.5625e-05
3852  Epoch 7509/10000
3853   - 0s - loss: 3.1622e-04 - mean_absolute_error: 0.0078 -
      val_loss: 32.0880 - val_mean_absolute_error: 3.6085
```

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3854 epoch_end_callback epoch 7508 lr 1.5625e-05
3855 Epoch 7510/10000
3856  - 0s - loss: 3.2428e-04 - mean_absolute_error: 0.0087 -
     val_loss: 32.1020 - val_mean_absolute_error: 3.6078
3857
3858 Epoch 07510: saving model to ./model/
     model_Epoch7510_val_mean_absolute_error3.608.h5
3859 epoch_end_callback epoch 7509 lr 1.5625e-05
3860 Epoch 7511/10000
3861  - 0s - loss: 3.4102e-04 - mean_absolute_error: 0.0075 -
     val_loss: 32.0915 - val_mean_absolute_error: 3.6070
3862 epoch_end_callback epoch 7510 lr 1.5625e-05
3863 Epoch 7512/10000
3864  - 0s - loss: 3.0169e-04 - mean_absolute_error: 0.0076 -
     val_loss: 32.0736 - val_mean_absolute_error: 3.6071
3865 epoch_end_callback epoch 7511 lr 1.5625e-05
3866 Epoch 7513/10000
3867  - 0s - loss: 3.0632e-04 - mean_absolute_error: 0.0082 -
     val_loss: 32.0873 - val_mean_absolute_error: 3.6101
3868 epoch_end_callback epoch 7512 lr 1.5625e-05
3869 Epoch 7514/10000
3870  - 0s - loss: 3.2312e-04 - mean_absolute_error: 0.0080 -
     val_loss: 32.0889 - val_mean_absolute_error: 3.6089
3871 epoch_end_callback epoch 7513 lr 1.5625e-05
3872 Epoch 7515/10000
3873  - 0s - loss: 3.0406e-04 - mean_absolute_error: 0.0075 -
     val_loss: 32.0786 - val_mean_absolute_error: 3.6091
3874 epoch_end_callback epoch 7514 lr 1.5625e-05
3875 Epoch 7516/10000
3876  - 0s - loss: 3.0846e-04 - mean_absolute_error: 0.0075 -
     val_loss: 32.0859 - val_mean_absolute_error: 3.6098
3877 epoch_end_callback epoch 7515 lr 1.5625e-05
3878 Epoch 7517/10000
3879  - 0s - loss: 3.0704e-04 - mean_absolute_error: 0.0082 -
     val_loss: 32.1077 - val_mean_absolute_error: 3.6082
3880 epoch_end_callback epoch 7516 lr 1.5625e-05
3881 Epoch 7518/10000
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3882    - 0s - loss: 2.9203e-04 - mean_absolute_error: 0.0081 -
        val_loss: 32.1242 - val_mean_absolute_error: 3.6102
3883  epoch_end_callback epoch 7517 lr 1.5625e-05
3884  Epoch 7519/10000
3885    - 0s - loss: 3.2605e-04 - mean_absolute_error: 0.0080 -
        val_loss: 32.0794 - val_mean_absolute_error: 3.6082
3886  epoch_end_callback epoch 7518 lr 1.5625e-05
3887  Epoch 7520/10000
3888    - 0s - loss: 3.1948e-04 - mean_absolute_error: 0.0080 -
        val_loss: 32.1004 - val_mean_absolute_error: 3.6097
3889
3890  Epoch 07520: saving model to ./model/
        model_Epoch7520_val_mean_absolute_error3.610.h5
3891  epoch_end_callback epoch 7519 lr 1.5625e-05
3892  Epoch 7521/10000
3893    - 0s - loss: 3.0953e-04 - mean_absolute_error: 0.0078 -
        val_loss: 32.1115 - val_mean_absolute_error: 3.6103
3894  epoch_end_callback epoch 7520 lr 1.5625e-05
3895  Epoch 7522/10000
3896    - 0s - loss: 3.1314e-04 - mean_absolute_error: 0.0073 -
        val_loss: 32.1134 - val_mean_absolute_error: 3.6090
3897  epoch_end_callback epoch 7521 lr 1.5625e-05
3898  Epoch 7523/10000
3899    - 0s - loss: 2.7968e-04 - mean_absolute_error: 0.0073 -
        val_loss: 32.0983 - val_mean_absolute_error: 3.6090
3900  epoch_end_callback epoch 7522 lr 1.5625e-05
3901  Epoch 7524/10000
3902    - 0s - loss: 3.2576e-04 - mean_absolute_error: 0.0081 -
        val_loss: 32.0863 - val_mean_absolute_error: 3.6101
3903  epoch_end_callback epoch 7523 lr 1.5625e-05
3904  Epoch 7525/10000
3905    - 0s - loss: 3.2177e-04 - mean_absolute_error: 0.0084 -
        val_loss: 32.0911 - val_mean_absolute_error: 3.6091
3906  epoch_end_callback epoch 7524 lr 1.5625e-05
3907  Epoch 7526/10000
3908    - 0s - loss: 3.2208e-04 - mean_absolute_error: 0.0076 -
        val_loss: 32.0873 - val_mean_absolute_error: 3.6100
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3909 epoch_end_callback epoch 7525 lr 1.5625e-05
3910 Epoch 7527/10000
3911 - 0s - loss: 2.8039e-04 - mean_absolute_error: 0.0069 - val_loss: 32.1190 - val_mean_absolute_error: 3.6102
3912 epoch_end_callback epoch 7526 lr 1.5625e-05
3913 Epoch 7528/10000
3914 - 0s - loss: 3.1986e-04 - mean_absolute_error: 0.0082 - val_loss: 32.0497 - val_mean_absolute_error: 3.6067
3915 epoch_end_callback epoch 7527 lr 1.5625e-05
3916 Epoch 7529/10000
3917 - 0s - loss: 3.1221e-04 - mean_absolute_error: 0.0080 - val_loss: 32.1021 - val_mean_absolute_error: 3.6095
3918 epoch_end_callback epoch 7528 lr 1.5625e-05
3919 Epoch 7530/10000
3920 - 0s - loss: 2.9832e-04 - mean_absolute_error: 0.0073 - val_loss: 32.0351 - val_mean_absolute_error: 3.6077
3921
3922 Epoch 07530: saving model to ./model/model_Epoch7530_val_mean_absolute_error3.608.h5
3923 epoch_end_callback epoch 7529 lr 1.5625e-05
3924 Epoch 7531/10000
3925 - 0s - loss: 3.1252e-04 - mean_absolute_error: 0.0074 - val_loss: 32.1044 - val_mean_absolute_error: 3.6078
3926 epoch_end_callback epoch 7530 lr 1.5625e-05
3927 Epoch 7532/10000
3928 - 0s - loss: 3.0738e-04 - mean_absolute_error: 0.0071 - val_loss: 32.0998 - val_mean_absolute_error: 3.6088
3929 epoch_end_callback epoch 7531 lr 1.5625e-05
3930 Epoch 7533/10000
3931 - 0s - loss: 3.0111e-04 - mean_absolute_error: 0.0079 - val_loss: 32.1064 - val_mean_absolute_error: 3.6095
3932 epoch_end_callback epoch 7532 lr 1.5625e-05
3933 Epoch 7534/10000
3934 - 0s - loss: 3.0982e-04 - mean_absolute_error: 0.0075 - val_loss: 32.0706 - val_mean_absolute_error: 3.6085
3935 epoch_end_callback epoch 7533 lr 1.5625e-05
3936 Epoch 7535/10000

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3937    - 0s - loss: 2.8218e-04 - mean_absolute_error: 0.0072 - val_loss: 32.0949 - val_mean_absolute_error: 3.6108
3938  epoch_end_callback epoch 7534 lr 1.5625e-05
3939  Epoch 7536/10000
3940    - 0s - loss: 3.2732e-04 - mean_absolute_error: 0.0085 - val_loss: 32.1063 - val_mean_absolute_error: 3.6093
3941  epoch_end_callback epoch 7535 lr 1.5625e-05
3942  Epoch 7537/10000
3943    - 0s - loss: 3.1108e-04 - mean_absolute_error: 0.0082 - val_loss: 32.0919 - val_mean_absolute_error: 3.6093
3944  epoch_end_callback epoch 7536 lr 1.5625e-05
3945  Epoch 7538/10000
3946    - 0s - loss: 3.1964e-04 - mean_absolute_error: 0.0075 - val_loss: 32.1002 - val_mean_absolute_error: 3.6098
3947  epoch_end_callback epoch 7537 lr 1.5625e-05
3948  Epoch 7539/10000
3949    - 0s - loss: 3.3040e-04 - mean_absolute_error: 0.0081 - val_loss: 32.1069 - val_mean_absolute_error: 3.6099
3950  epoch_end_callback epoch 7538 lr 1.5625e-05
3951  Epoch 7540/10000
3952    - 0s - loss: 3.1044e-04 - mean_absolute_error: 0.0080 - val_loss: 32.0952 - val_mean_absolute_error: 3.6102
3953
3954  Epoch 07540: saving model to ./model/model_Epoch7540_val_mean_absolute_error3.610.h5
3955  epoch_end_callback epoch 7539 lr 1.5625e-05
3956  Epoch 7541/10000
3957    - 0s - loss: 2.9560e-04 - mean_absolute_error: 0.0072 - val_loss: 32.1119 - val_mean_absolute_error: 3.6111
3958  epoch_end_callback epoch 7540 lr 1.5625e-05
3959  Epoch 7542/10000
3960    - 0s - loss: 2.9144e-04 - mean_absolute_error: 0.0077 - val_loss: 32.0890 - val_mean_absolute_error: 3.6094
3961  epoch_end_callback epoch 7541 lr 1.5625e-05
3962  Epoch 7543/10000
3963    - 0s - loss: 3.3484e-04 - mean_absolute_error: 0.0077 - val_loss: 32.0725 - val_mean_absolute_error: 3.6094
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3964 epoch_end_callback epoch 7542 lr 1.5625e-05
3965 Epoch 7544/10000
3966  - 0s - loss: 3.1765e-04 - mean_absolute_error: 0.0086 -
     val_loss: 32.0836 - val_mean_absolute_error: 3.6082
3967 epoch_end_callback epoch 7543 lr 1.5625e-05
3968 Epoch 7545/10000
3969  - 0s - loss: 2.9232e-04 - mean_absolute_error: 0.0078 -
     val_loss: 32.0970 - val_mean_absolute_error: 3.6095
3970 epoch_end_callback epoch 7544 lr 1.5625e-05
3971 Epoch 7546/10000
3972  - 0s - loss: 3.4323e-04 - mean_absolute_error: 0.0085 -
     val_loss: 32.0986 - val_mean_absolute_error: 3.6091
3973 epoch_end_callback epoch 7545 lr 1.5625e-05
3974 Epoch 7547/10000
3975  - 0s - loss: 3.0437e-04 - mean_absolute_error: 0.0079 -
     val_loss: 32.1334 - val_mean_absolute_error: 3.6123
3976 epoch_end_callback epoch 7546 lr 1.5625e-05
3977 Epoch 7548/10000
3978  - 0s - loss: 3.1311e-04 - mean_absolute_error: 0.0076 -
     val_loss: 32.1194 - val_mean_absolute_error: 3.6116
3979 epoch_end_callback epoch 7547 lr 1.5625e-05
3980 Epoch 7549/10000
3981  - 0s - loss: 3.0551e-04 - mean_absolute_error: 0.0077 -
     val_loss: 32.0879 - val_mean_absolute_error: 3.6094
3982 epoch_end_callback epoch 7548 lr 1.5625e-05
3983 Epoch 7550/10000
3984  - 0s - loss: 3.0194e-04 - mean_absolute_error: 0.0071 -
     val_loss: 32.0925 - val_mean_absolute_error: 3.6088
3985
3986 Epoch 07550: saving model to ./model/
     model_Epoch7550_val_mean_absolute_error3.609.h5
3987 epoch_end_callback epoch 7549 lr 1.5625e-05
3988 Epoch 7551/10000
3989  - 0s - loss: 3.4299e-04 - mean_absolute_error: 0.0085 -
     val_loss: 32.0922 - val_mean_absolute_error: 3.6094
3990 epoch_end_callback epoch 7550 lr 1.5625e-05
3991 Epoch 7552/10000
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3992    - 0s - loss: 3.3979e-04 - mean_absolute_error: 0.0076 - val_loss: 32.0984 - val_mean_absolute_error: 3.6092
3993  epoch_end_callback epoch 7551 lr 1.5625e-05
3994  Epoch 7553/10000
3995    - 0s - loss: 3.1997e-04 - mean_absolute_error: 0.0068 - val_loss: 32.0897 - val_mean_absolute_error: 3.6090
3996  epoch_end_callback epoch 7552 lr 1.5625e-05
3997  Epoch 7554/10000
3998    - 0s - loss: 3.0691e-04 - mean_absolute_error: 0.0072 - val_loss: 32.1041 - val_mean_absolute_error: 3.6104
3999  epoch_end_callback epoch 7553 lr 1.5625e-05
4000  Epoch 7555/10000
4001    - 0s - loss: 3.3300e-04 - mean_absolute_error: 0.0089 - val_loss: 32.0403 - val_mean_absolute_error: 3.6066
4002  epoch_end_callback epoch 7554 lr 1.5625e-05
4003  Epoch 7556/10000
4004    - 0s - loss: 2.9248e-04 - mean_absolute_error: 0.0072 - val_loss: 32.0924 - val_mean_absolute_error: 3.6088
4005  epoch_end_callback epoch 7555 lr 1.5625e-05
4006  Epoch 7557/10000
4007    - 0s - loss: 3.0053e-04 - mean_absolute_error: 0.0077 - val_loss: 32.1155 - val_mean_absolute_error: 3.6092
4008  epoch_end_callback epoch 7556 lr 1.5625e-05
4009  Epoch 7558/10000
4010    - 0s - loss: 3.1379e-04 - mean_absolute_error: 0.0083 - val_loss: 32.1010 - val_mean_absolute_error: 3.6077
4011  epoch_end_callback epoch 7557 lr 1.5625e-05
4012  Epoch 7559/10000
4013    - 0s - loss: 3.0884e-04 - mean_absolute_error: 0.0089 - val_loss: 32.0977 - val_mean_absolute_error: 3.6093
4014  epoch_end_callback epoch 7558 lr 1.5625e-05
4015  Epoch 7560/10000
4016    - 0s - loss: 3.1345e-04 - mean_absolute_error: 0.0080 - val_loss: 32.0922 - val_mean_absolute_error: 3.6088
4017
4018  Epoch 07560: saving model to ./model/
      model_Epoch7560_val_mean_absolute_error3.609.h5
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4019  epoch_end_callback epoch 7559 lr 1.5625e-05
4020  Epoch 7561/10000
4021   - 0s - loss: 3.0581e-04 - mean_absolute_error: 0.0077 -
      val_loss: 32.0885 - val_mean_absolute_error: 3.6091
4022  epoch_end_callback epoch 7560 lr 1.5625e-05
4023  Epoch 7562/10000
4024   - 0s - loss: 3.3158e-04 - mean_absolute_error: 0.0083 -
      val_loss: 32.1226 - val_mean_absolute_error: 3.6109
4025  epoch_end_callback epoch 7561 lr 1.5625e-05
4026  Epoch 7563/10000
4027   - 0s - loss: 3.1722e-04 - mean_absolute_error: 0.0090 -
      val_loss: 32.0996 - val_mean_absolute_error: 3.6090
4028  epoch_end_callback epoch 7562 lr 1.5625e-05
4029  Epoch 7564/10000
4030   - 0s - loss: 2.9965e-04 - mean_absolute_error: 0.0078 -
      val_loss: 32.1014 - val_mean_absolute_error: 3.6075
4031  epoch_end_callback epoch 7563 lr 1.5625e-05
4032  Epoch 7565/10000
4033   - 0s - loss: 3.2752e-04 - mean_absolute_error: 0.0079 -
      val_loss: 32.0927 - val_mean_absolute_error: 3.6090
4034  epoch_end_callback epoch 7564 lr 1.5625e-05
4035  Epoch 7566/10000
4036   - 0s - loss: 3.2706e-04 - mean_absolute_error: 0.0082 -
      val_loss: 32.0854 - val_mean_absolute_error: 3.6081
4037  epoch_end_callback epoch 7565 lr 1.5625e-05
4038  Epoch 7567/10000
4039   - 0s - loss: 3.0430e-04 - mean_absolute_error: 0.0072 -
      val_loss: 32.1043 - val_mean_absolute_error: 3.6099
4040  epoch_end_callback epoch 7566 lr 1.5625e-05
4041  Epoch 7568/10000
4042   - 0s - loss: 3.2328e-04 - mean_absolute_error: 0.0086 -
      val_loss: 32.1040 - val_mean_absolute_error: 3.6094
4043  epoch_end_callback epoch 7567 lr 1.5625e-05
4044  Epoch 7569/10000
4045   - 0s - loss: 2.9693e-04 - mean_absolute_error: 0.0078 -
      val_loss: 32.0800 - val_mean_absolute_error: 3.6100
4046  epoch_end_callback epoch 7568 lr 1.5625e-05
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4047  Epoch 7570/10000
4048   - 0s - loss: 3.2367e-04 - mean_absolute_error: 0.0079 -
      val_loss: 32.0921 - val_mean_absolute_error: 3.6095
4049
4050  Epoch 07570: saving model to ./model/
      model_Epoch7570_val_mean_absolute_error3.609.h5
4051  epoch_end_callback epoch 7569 lr 1.5625e-05
4052  Epoch 7571/10000
4053   - 0s - loss: 3.1844e-04 - mean_absolute_error: 0.0085 -
      val_loss: 32.0990 - val_mean_absolute_error: 3.6090
4054  epoch_end_callback epoch 7570 lr 1.5625e-05
4055  Epoch 7572/10000
4056   - 0s - loss: 3.1596e-04 - mean_absolute_error: 0.0078 -
      val_loss: 32.0861 - val_mean_absolute_error: 3.6090
4057  epoch_end_callback epoch 7571 lr 1.5625e-05
4058  Epoch 7573/10000
4059   - 0s - loss: 2.8340e-04 - mean_absolute_error: 0.0074 -
      val_loss: 32.0806 - val_mean_absolute_error: 3.6086
4060  epoch_end_callback epoch 7572 lr 1.5625e-05
4061  Epoch 7574/10000
4062   - 0s - loss: 3.1443e-04 - mean_absolute_error: 0.0079 -
      val_loss: 32.0830 - val_mean_absolute_error: 3.6085
4063  epoch_end_callback epoch 7573 lr 1.5625e-05
4064  Epoch 7575/10000
4065   - 0s - loss: 2.8761e-04 - mean_absolute_error: 0.0080 -
      val_loss: 32.1047 - val_mean_absolute_error: 3.6108
4066  epoch_end_callback epoch 7574 lr 1.5625e-05
4067  Epoch 7576/10000
4068   - 0s - loss: 2.9750e-04 - mean_absolute_error: 0.0075 -
      val_loss: 32.0786 - val_mean_absolute_error: 3.6097
4069  epoch_end_callback epoch 7575 lr 1.5625e-05
4070  Epoch 7577/10000
4071   - 0s - loss: 3.4499e-04 - mean_absolute_error: 0.0085 -
      val_loss: 32.0618 - val_mean_absolute_error: 3.6079
4072  epoch_end_callback epoch 7576 lr 1.5625e-05
4073  Epoch 7578/10000
4074   - 0s - loss: 3.0304e-04 - mean_absolute_error: 0.0082 -
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4074  val_loss: 32.0868 - val_mean_absolute_error: 3.6084
4075  epoch_end_callback epoch 7577 lr 1.5625e-05
4076  Epoch 7579/10000
4077   - 0s - loss: 3.0214e-04 - mean_absolute_error: 0.0074 -
      val_loss: 32.1176 - val_mean_absolute_error: 3.6081
4078  epoch_end_callback epoch 7578 lr 1.5625e-05
4079  Epoch 7580/10000
4080   - 0s - loss: 3.0419e-04 - mean_absolute_error: 0.0075 -
      val_loss: 32.0853 - val_mean_absolute_error: 3.6068
4081
4082  Epoch 07580: saving model to ./model/
      model_Epoch7580_val_mean_absolute_error3.607.h5
4083  epoch_end_callback epoch 7579 lr 1.5625e-05
4084  Epoch 7581/10000
4085   - 0s - loss: 2.9221e-04 - mean_absolute_error: 0.0082 -
      val_loss: 32.0800 - val_mean_absolute_error: 3.6087
4086  epoch_end_callback epoch 7580 lr 1.5625e-05
4087  Epoch 7582/10000
4088   - 0s - loss: 2.7992e-04 - mean_absolute_error: 0.0077 -
      val_loss: 32.1050 - val_mean_absolute_error: 3.6097
4089  epoch_end_callback epoch 7581 lr 1.5625e-05
4090  Epoch 7583/10000
4091   - 0s - loss: 3.1644e-04 - mean_absolute_error: 0.0073 -
      val_loss: 32.0841 - val_mean_absolute_error: 3.6091
4092  epoch_end_callback epoch 7582 lr 1.5625e-05
4093  Epoch 7584/10000
4094   - 0s - loss: 3.2856e-04 - mean_absolute_error: 0.0083 -
      val_loss: 32.0928 - val_mean_absolute_error: 3.6082
4095  epoch_end_callback epoch 7583 lr 1.5625e-05
4096  Epoch 7585/10000
4097   - 0s - loss: 2.9657e-04 - mean_absolute_error: 0.0081 -
      val_loss: 32.0827 - val_mean_absolute_error: 3.6093
4098  epoch_end_callback epoch 7584 lr 1.5625e-05
4099  Epoch 7586/10000
4100   - 0s - loss: 3.0193e-04 - mean_absolute_error: 0.0070 -
      val_loss: 32.0909 - val_mean_absolute_error: 3.6095
4101  epoch_end_callback epoch 7585 lr 1.5625e-05
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4102  Epoch 7587/10000
4103   - 0s - loss: 3.3716e-04 - mean_absolute_error: 0.0091 -
      val_loss: 32.0996 - val_mean_absolute_error: 3.6094
4104  epoch_end_callback epoch 7586 lr 1.5625e-05
4105  Epoch 7588/10000
4106   - 0s - loss: 3.0153e-04 - mean_absolute_error: 0.0079 -
      val_loss: 32.0739 - val_mean_absolute_error: 3.6083
4107  epoch_end_callback epoch 7587 lr 1.5625e-05
4108  Epoch 7589/10000
4109   - 0s - loss: 3.2423e-04 - mean_absolute_error: 0.0077 -
      val_loss: 32.0895 - val_mean_absolute_error: 3.6076
4110  epoch_end_callback epoch 7588 lr 1.5625e-05
4111  Epoch 7590/10000
4112   - 0s - loss: 3.1656e-04 - mean_absolute_error: 0.0080 -
      val_loss: 32.0654 - val_mean_absolute_error: 3.6080
4113
4114  Epoch 07590: saving model to ./model/
      model_Epoch7590_val_mean_absolute_error3.608.h5
4115  epoch_end_callback epoch 7589 lr 1.5625e-05
4116  Epoch 7591/10000
4117   - 0s - loss: 3.1279e-04 - mean_absolute_error: 0.0081 -
      val_loss: 32.1042 - val_mean_absolute_error: 3.6110
4118  epoch_end_callback epoch 7590 lr 1.5625e-05
4119  Epoch 7592/10000
4120   - 0s - loss: 2.9791e-04 - mean_absolute_error: 0.0071 -
      val_loss: 32.1088 - val_mean_absolute_error: 3.6102
4121  epoch_end_callback epoch 7591 lr 1.5625e-05
4122  Epoch 7593/10000
4123   - 0s - loss: 3.0891e-04 - mean_absolute_error: 0.0086 -
      val_loss: 32.1040 - val_mean_absolute_error: 3.6098
4124  epoch_end_callback epoch 7592 lr 1.5625e-05
4125  Epoch 7594/10000
4126   - 0s - loss: 2.9607e-04 - mean_absolute_error: 0.0072 -
      val_loss: 32.1132 - val_mean_absolute_error: 3.6095
4127  epoch_end_callback epoch 7593 lr 1.5625e-05
4128  Epoch 7595/10000
4129   - 0s - loss: 3.1043e-04 - mean_absolute_error: 0.0083 -
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4129  val_loss: 32.0966 - val_mean_absolute_error: 3.6098
4130  epoch_end_callback epoch 7594 lr 1.5625e-05
4131  Epoch 7596/10000
4132   - 0s - loss: 2.8934e-04 - mean_absolute_error: 0.0066 -
      val_loss: 32.0823 - val_mean_absolute_error: 3.6094
4133  epoch_end_callback epoch 7595 lr 1.5625e-05
4134  Epoch 7597/10000
4135   - 0s - loss: 3.4460e-04 - mean_absolute_error: 0.0088 -
      val_loss: 32.0993 - val_mean_absolute_error: 3.6092
4136  epoch_end_callback epoch 7596 lr 1.5625e-05
4137  Epoch 7598/10000
4138   - 0s - loss: 2.6754e-04 - mean_absolute_error: 0.0075 -
      val_loss: 32.0979 - val_mean_absolute_error: 3.6097
4139  epoch_end_callback epoch 7597 lr 1.5625e-05
4140  Epoch 7599/10000
4141   - 0s - loss: 2.9599e-04 - mean_absolute_error: 0.0080 -
      val_loss: 32.0690 - val_mean_absolute_error: 3.6083
4142  epoch_end_callback epoch 7598 lr 1.5625e-05
4143  Epoch 7600/10000
4144   - 0s - loss: 3.0268e-04 - mean_absolute_error: 0.0080 -
      val_loss: 32.1144 - val_mean_absolute_error: 3.6097
4145
4146  Epoch 07600: saving model to ./model/
      model_Epoch7600_val_mean_absolute_error3.610.h5
4147  epoch_end_callback epoch 7599 lr 1.5625e-05
4148  Epoch 7601/10000
4149   - 0s - loss: 3.3151e-04 - mean_absolute_error: 0.0080 -
      val_loss: 32.0882 - val_mean_absolute_error: 3.6089
4150  epoch_end_callback epoch 7600 lr 1.5625e-05
4151  Epoch 7602/10000
4152   - 0s - loss: 2.8397e-04 - mean_absolute_error: 0.0073 -
      val_loss: 32.0754 - val_mean_absolute_error: 3.6081
4153  epoch_end_callback epoch 7601 lr 1.5625e-05
4154  Epoch 7603/10000
4155   - 0s - loss: 3.1882e-04 - mean_absolute_error: 0.0088 -
      val_loss: 32.0781 - val_mean_absolute_error: 3.6088
4156  epoch_end_callback epoch 7602 lr 1.5625e-05
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4157  Epoch 7604/10000
4158   - 0s - loss: 3.1934e-04 - mean_absolute_error: 0.0076 -
      val_loss: 32.1149 - val_mean_absolute_error: 3.6104
4159  epoch_end_callback epoch 7603 lr 1.5625e-05
4160  Epoch 7605/10000
4161   - 0s - loss: 2.7557e-04 - mean_absolute_error: 0.0073 -
      val_loss: 32.0908 - val_mean_absolute_error: 3.6097
4162  epoch_end_callback epoch 7604 lr 1.5625e-05
4163  Epoch 7606/10000
4164   - 0s - loss: 3.1407e-04 - mean_absolute_error: 0.0085 -
      val_loss: 32.0940 - val_mean_absolute_error: 3.6098
4165  epoch_end_callback epoch 7605 lr 1.5625e-05
4166  Epoch 7607/10000
4167   - 0s - loss: 2.9328e-04 - mean_absolute_error: 0.0073 -
      val_loss: 32.0835 - val_mean_absolute_error: 3.6081
4168  epoch_end_callback epoch 7606 lr 1.5625e-05
4169  Epoch 7608/10000
4170   - 0s - loss: 3.1389e-04 - mean_absolute_error: 0.0081 -
      val_loss: 32.0337 - val_mean_absolute_error: 3.6073
4171  epoch_end_callback epoch 7607 lr 1.5625e-05
4172  Epoch 7609/10000
4173   - 0s - loss: 3.0963e-04 - mean_absolute_error: 0.0079 -
      val_loss: 32.0966 - val_mean_absolute_error: 3.6100
4174  epoch_end_callback epoch 7608 lr 1.5625e-05
4175  Epoch 7610/10000
4176   - 0s - loss: 2.8083e-04 - mean_absolute_error: 0.0061 -
      val_loss: 32.0718 - val_mean_absolute_error: 3.6096
4177
4178  Epoch 07610: saving model to ./model/
      model_Epoch7610_val_mean_absolute_error3.610.h5
4179  epoch_end_callback epoch 7609 lr 1.5625e-05
4180  Epoch 7611/10000
4181   - 0s - loss: 3.5035e-04 - mean_absolute_error: 0.0086 -
      val_loss: 32.0958 - val_mean_absolute_error: 3.6089
4182  epoch_end_callback epoch 7610 lr 1.5625e-05
4183  Epoch 7612/10000
4184   - 0s - loss: 2.6822e-04 - mean_absolute_error: 0.0064 -
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4184  val_loss: 32.0929 - val_mean_absolute_error: 3.6100
4185  epoch_end_callback epoch 7611 lr 1.5625e-05
4186  Epoch 7613/10000
4187   - 0s - loss: 3.1069e-04 - mean_absolute_error: 0.0078 -
      val_loss: 32.1206 - val_mean_absolute_error: 3.6104
4188  epoch_end_callback epoch 7612 lr 1.5625e-05
4189  Epoch 7614/10000
4190   - 0s - loss: 3.1219e-04 - mean_absolute_error: 0.0085 -
      val_loss: 32.1083 - val_mean_absolute_error: 3.6096
4191  epoch_end_callback epoch 7613 lr 1.5625e-05
4192  Epoch 7615/10000
4193   - 0s - loss: 2.9276e-04 - mean_absolute_error: 0.0075 -
      val_loss: 32.1078 - val_mean_absolute_error: 3.6109
4194  epoch_end_callback epoch 7614 lr 1.5625e-05
4195  Epoch 7616/10000
4196   - 0s - loss: 3.0195e-04 - mean_absolute_error: 0.0083 -
      val_loss: 32.0913 - val_mean_absolute_error: 3.6091
4197  epoch_end_callback epoch 7615 lr 1.5625e-05
4198  Epoch 7617/10000
4199   - 0s - loss: 2.8974e-04 - mean_absolute_error: 0.0071 -
      val_loss: 32.1063 - val_mean_absolute_error: 3.6079
4200  epoch_end_callback epoch 7616 lr 1.5625e-05
4201  Epoch 7618/10000
4202   - 0s - loss: 3.2269e-04 - mean_absolute_error: 0.0085 -
      val_loss: 32.1168 - val_mean_absolute_error: 3.6100
4203  epoch_end_callback epoch 7617 lr 1.5625e-05
4204  Epoch 7619/10000
4205   - 0s - loss: 3.1901e-04 - mean_absolute_error: 0.0078 -
      val_loss: 32.1046 - val_mean_absolute_error: 3.6095
4206  epoch_end_callback epoch 7618 lr 1.5625e-05
4207  Epoch 7620/10000
4208   - 0s - loss: 3.1581e-04 - mean_absolute_error: 0.0079 -
      val_loss: 32.0942 - val_mean_absolute_error: 3.6093
4209
4210  Epoch 07620: saving model to ./model/
      model_Epoch7620_val_mean_absolute_error3.609.h5
4211  epoch_end_callback epoch 7619 lr 1.5625e-05
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4212 Epoch 7621/10000
4213 - 0s - loss: 3.0423e-04 - mean_absolute_error: 0.0074 - val_loss: 32.0798 - val_mean_absolute_error: 3.6093
4214 epoch_end_callback epoch 7620 lr 1.5625e-05
4215 Epoch 7622/10000
4216 - 0s - loss: 3.0135e-04 - mean_absolute_error: 0.0080 - val_loss: 32.0921 - val_mean_absolute_error: 3.6091
4217 epoch_end_callback epoch 7621 lr 1.5625e-05
4218 Epoch 7623/10000
4219 - 0s - loss: 2.9739e-04 - mean_absolute_error: 0.0080 - val_loss: 32.1002 - val_mean_absolute_error: 3.6096
4220 epoch_end_callback epoch 7622 lr 1.5625e-05
4221 Epoch 7624/10000
4222 - 0s - loss: 2.5207e-04 - mean_absolute_error: 0.0076 - val_loss: 32.0791 - val_mean_absolute_error: 3.6102
4223 epoch_end_callback epoch 7623 lr 1.5625e-05
4224 Epoch 7625/10000
4225 - 0s - loss: 3.1999e-04 - mean_absolute_error: 0.0078 - val_loss: 32.1092 - val_mean_absolute_error: 3.6095
4226 epoch_end_callback epoch 7624 lr 1.5625e-05
4227 Epoch 7626/10000
4228 - 0s - loss: 3.5859e-04 - mean_absolute_error: 0.0084 - val_loss: 32.1097 - val_mean_absolute_error: 3.6101
4229 epoch_end_callback epoch 7625 lr 1.5625e-05
4230 Epoch 7627/10000
4231 - 0s - loss: 2.5106e-04 - mean_absolute_error: 0.0064 - val_loss: 32.1038 - val_mean_absolute_error: 3.6119
4232 epoch_end_callback epoch 7626 lr 1.5625e-05
4233 Epoch 7628/10000
4234 - 0s - loss: 2.9549e-04 - mean_absolute_error: 0.0086 - val_loss: 32.1060 - val_mean_absolute_error: 3.6096
4235 epoch_end_callback epoch 7627 lr 1.5625e-05
4236 Epoch 7629/10000
4237 - 0s - loss: 2.9638e-04 - mean_absolute_error: 0.0082 - val_loss: 32.1121 - val_mean_absolute_error: 3.6095
4238 epoch_end_callback epoch 7628 lr 1.5625e-05
4239 Epoch 7630/10000

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4240    - 0s - loss: 3.0404e-04 - mean_absolute_error: 0.0081 -
        val_loss: 32.1156 - val_mean_absolute_error: 3.6101

4241

4242  Epoch 07630: saving model to ./model/
      model_Epoch7630_val_mean_absolute_error3.610.h5

4243  epoch_end_callback epoch 7629 lr 1.5625e-05

4244  Epoch 7631/10000

4245    - 0s - loss: 2.9804e-04 - mean_absolute_error: 0.0078 -
        val_loss: 32.1030 - val_mean_absolute_error: 3.6092

4246  epoch_end_callback epoch 7630 lr 1.5625e-05

4247  Epoch 7632/10000

4248    - 0s - loss: 2.9630e-04 - mean_absolute_error: 0.0080 -
        val_loss: 32.1291 - val_mean_absolute_error: 3.6083

4249  epoch_end_callback epoch 7631 lr 1.5625e-05

4250  Epoch 7633/10000

4251    - 0s - loss: 3.3642e-04 - mean_absolute_error: 0.0084 -
        val_loss: 32.0914 - val_mean_absolute_error: 3.6092

4252  epoch_end_callback epoch 7632 lr 1.5625e-05

4253  Epoch 7634/10000

4254    - 0s - loss: 2.8149e-04 - mean_absolute_error: 0.0074 -
        val_loss: 32.1013 - val_mean_absolute_error: 3.6094

4255  epoch_end_callback epoch 7633 lr 1.5625e-05

4256  Epoch 7635/10000

4257    - 0s - loss: 2.8597e-04 - mean_absolute_error: 0.0076 -
        val_loss: 32.0937 - val_mean_absolute_error: 3.6093

4258  epoch_end_callback epoch 7634 lr 1.5625e-05

4259  Epoch 7636/10000

4260    - 0s - loss: 3.2243e-04 - mean_absolute_error: 0.0079 -
        val_loss: 32.0926 - val_mean_absolute_error: 3.6085

4261  epoch_end_callback epoch 7635 lr 1.5625e-05

4262  Epoch 7637/10000

4263    - 0s - loss: 3.0529e-04 - mean_absolute_error: 0.0081 -
        val_loss: 32.1608 - val_mean_absolute_error: 3.6111

4264  epoch_end_callback epoch 7636 lr 1.5625e-05

4265  Epoch 7638/10000

4266    - 0s - loss: 3.2447e-04 - mean_absolute_error: 0.0075 -
        val_loss: 32.1327 - val_mean_absolute_error: 3.6104
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4267 epoch_end_callback epoch 7637 lr 1.5625e-05
4268 Epoch 7639/10000
4269  - 0s - loss: 2.9882e-04 - mean_absolute_error: 0.0071 -
      val_loss: 32.0860 - val_mean_absolute_error: 3.6091
4270 epoch_end_callback epoch 7638 lr 1.5625e-05
4271 Epoch 7640/10000
4272  - 0s - loss: 3.2487e-04 - mean_absolute_error: 0.0076 -
      val_loss: 32.0996 - val_mean_absolute_error: 3.6091
4273
4274 Epoch 07640: saving model to ./model/
      model_Epoch7640_val_mean_absolute_error3.609.h5
4275 epoch_end_callback epoch 7639 lr 1.5625e-05
4276 Epoch 7641/10000
4277  - 0s - loss: 3.0293e-04 - mean_absolute_error: 0.0076 -
      val_loss: 32.0865 - val_mean_absolute_error: 3.6080
4278 epoch_end_callback epoch 7640 lr 1.5625e-05
4279 Epoch 7642/10000
4280  - 0s - loss: 2.8385e-04 - mean_absolute_error: 0.0077 -
      val_loss: 32.0967 - val_mean_absolute_error: 3.6102
4281 epoch_end_callback epoch 7641 lr 1.5625e-05
4282 Epoch 7643/10000
4283  - 0s - loss: 3.0127e-04 - mean_absolute_error: 0.0082 -
      val_loss: 32.0800 - val_mean_absolute_error: 3.6081
4284 epoch_end_callback epoch 7642 lr 1.5625e-05
4285 Epoch 7644/10000
4286  - 0s - loss: 2.9258e-04 - mean_absolute_error: 0.0075 -
      val_loss: 32.1028 - val_mean_absolute_error: 3.6105
4287 epoch_end_callback epoch 7643 lr 1.5625e-05
4288 Epoch 7645/10000
4289  - 0s - loss: 3.5879e-04 - mean_absolute_error: 0.0085 -
      val_loss: 32.0943 - val_mean_absolute_error: 3.6097
4290 epoch_end_callback epoch 7644 lr 1.5625e-05
4291 Epoch 7646/10000
4292  - 0s - loss: 2.7738e-04 - mean_absolute_error: 0.0071 -
      val_loss: 32.1078 - val_mean_absolute_error: 3.6103
4293 epoch_end_callback epoch 7645 lr 1.5625e-05
4294 Epoch 7647/10000
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4295     - 0s - loss: 3.0770e-04 - mean_absolute_error: 0.0073 -
         val_loss: 32.1217 - val_mean_absolute_error: 3.6098
4296  epoch_end_callback epoch 7646 lr 1.5625e-05
4297  Epoch 7648/10000
4298     - 0s - loss: 2.9731e-04 - mean_absolute_error: 0.0078 -
         val_loss: 32.0944 - val_mean_absolute_error: 3.6079
4299  epoch_end_callback epoch 7647 lr 1.5625e-05
4300  Epoch 7649/10000
4301     - 0s - loss: 3.1130e-04 - mean_absolute_error: 0.0077 -
         val_loss: 32.0625 - val_mean_absolute_error: 3.6093
4302  epoch_end_callback epoch 7648 lr 1.5625e-05
4303  Epoch 7650/10000
4304     - 0s - loss: 2.7443e-04 - mean_absolute_error: 0.0071 -
         val_loss: 32.1046 - val_mean_absolute_error: 3.6095
4305
4306  Epoch 07650: saving model to ./model/
         model_Epoch7650_val_mean_absolute_error3.609.h5
4307  epoch_end_callback epoch 7649 lr 1.5625e-05
4308  Epoch 7651/10000
4309     - 0s - loss: 3.0392e-04 - mean_absolute_error: 0.0079 -
         val_loss: 32.0902 - val_mean_absolute_error: 3.6086
4310  epoch_end_callback epoch 7650 lr 1.5625e-05
4311  Epoch 7652/10000
4312     - 0s - loss: 2.8763e-04 - mean_absolute_error: 0.0077 -
         val_loss: 32.1019 - val_mean_absolute_error: 3.6093
4313  epoch_end_callback epoch 7651 lr 1.5625e-05
4314  Epoch 7653/10000
4315     - 0s - loss: 2.8360e-04 - mean_absolute_error: 0.0074 -
         val_loss: 32.0923 - val_mean_absolute_error: 3.6090
4316  epoch_end_callback epoch 7652 lr 1.5625e-05
4317  Epoch 7654/10000
4318     - 0s - loss: 3.0237e-04 - mean_absolute_error: 0.0083 -
         val_loss: 32.1109 - val_mean_absolute_error: 3.6089
4319  epoch_end_callback epoch 7653 lr 1.5625e-05
4320  Epoch 7655/10000
4321     - 0s - loss: 3.0781e-04 - mean_absolute_error: 0.0075 -
         val_loss: 32.0984 - val_mean_absolute_error: 3.6091
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4322  epoch_end_callback epoch 7654 lr 1.5625e-05
4323  Epoch 7656/10000
4324   - 0s - loss: 2.8555e-04 - mean_absolute_error: 0.0074 -
      val_loss: 32.1324 - val_mean_absolute_error: 3.6082
4325  epoch_end_callback epoch 7655 lr 1.5625e-05
4326  Epoch 7657/10000
4327   - 0s - loss: 3.0646e-04 - mean_absolute_error: 0.0082 -
      val_loss: 32.0967 - val_mean_absolute_error: 3.6107
4328  epoch_end_callback epoch 7656 lr 1.5625e-05
4329  Epoch 7658/10000
4330   - 0s - loss: 3.0810e-04 - mean_absolute_error: 0.0078 -
      val_loss: 32.0971 - val_mean_absolute_error: 3.6082
4331  epoch_end_callback epoch 7657 lr 1.5625e-05
4332  Epoch 7659/10000
4333   - 0s - loss: 3.0496e-04 - mean_absolute_error: 0.0074 -
      val_loss: 32.1191 - val_mean_absolute_error: 3.6099
4334  epoch_end_callback epoch 7658 lr 1.5625e-05
4335  Epoch 7660/10000
4336   - 0s - loss: 3.3370e-04 - mean_absolute_error: 0.0086 -
      val_loss: 32.1137 - val_mean_absolute_error: 3.6092
4337
4338  Epoch 07660: saving model to ./model/
      model_Epoch7660_val_mean_absolute_error3.609.h5
4339  epoch_end_callback epoch 7659 lr 1.5625e-05
4340  Epoch 7661/10000
4341   - 0s - loss: 3.0269e-04 - mean_absolute_error: 0.0079 -
      val_loss: 32.0906 - val_mean_absolute_error: 3.6092
4342  epoch_end_callback epoch 7660 lr 1.5625e-05
4343  Epoch 7662/10000
4344   - 0s - loss: 3.0008e-04 - mean_absolute_error: 0.0072 -
      val_loss: 32.1013 - val_mean_absolute_error: 3.6074
4345  epoch_end_callback epoch 7661 lr 1.5625e-05
4346  Epoch 7663/10000
4347   - 0s - loss: 3.4275e-04 - mean_absolute_error: 0.0077 -
      val_loss: 32.0990 - val_mean_absolute_error: 3.6093
4348  epoch_end_callback epoch 7662 lr 1.5625e-05
4349  Epoch 7664/10000
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4350    - 0s - loss: 2.9444e-04 - mean_absolute_error: 0.0072 -
        val_loss: 32.1014 - val_mean_absolute_error: 3.6084
4351  epoch_end_callback epoch 7663 lr 1.5625e-05
4352  Epoch 7665/10000
4353    - 0s - loss: 3.0245e-04 - mean_absolute_error: 0.0075 -
        val_loss: 32.0931 - val_mean_absolute_error: 3.6095
4354  epoch_end_callback epoch 7664 lr 1.5625e-05
4355  Epoch 7666/10000
4356    - 0s - loss: 3.1856e-04 - mean_absolute_error: 0.0078 -
        val_loss: 32.1080 - val_mean_absolute_error: 3.6087
4357  epoch_end_callback epoch 7665 lr 1.5625e-05
4358  Epoch 7667/10000
4359    - 0s - loss: 3.1610e-04 - mean_absolute_error: 0.0074 -
        val_loss: 32.1185 - val_mean_absolute_error: 3.6099
4360  epoch_end_callback epoch 7666 lr 1.5625e-05
4361  Epoch 7668/10000
4362    - 0s - loss: 2.9082e-04 - mean_absolute_error: 0.0082 -
        val_loss: 32.0950 - val_mean_absolute_error: 3.6091
4363  epoch_end_callback epoch 7667 lr 1.5625e-05
4364  Epoch 7669/10000
4365    - 0s - loss: 3.0696e-04 - mean_absolute_error: 0.0078 -
        val_loss: 32.0999 - val_mean_absolute_error: 3.6093
4366  epoch_end_callback epoch 7668 lr 1.5625e-05
4367  Epoch 7670/10000
4368    - 0s - loss: 2.9064e-04 - mean_absolute_error: 0.0080 -
        val_loss: 32.1380 - val_mean_absolute_error: 3.6091
4369
4370  Epoch 07670: saving model to ./model/
        model_Epoch7670_val_mean_absolute_error3.609.h5
4371  epoch_end_callback epoch 7669 lr 1.5625e-05
4372  Epoch 7671/10000
4373    - 0s - loss: 3.0857e-04 - mean_absolute_error: 0.0078 -
        val_loss: 32.0922 - val_mean_absolute_error: 3.6086
4374  epoch_end_callback epoch 7670 lr 1.5625e-05
4375  Epoch 7672/10000
4376    - 0s - loss: 2.9785e-04 - mean_absolute_error: 0.0079 -
        val_loss: 32.1141 - val_mean_absolute_error: 3.6112
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4377  epoch_end_callback epoch 7671 lr 1.5625e-05
4378  Epoch 7673/10000
4379   - 0s - loss: 2.8752e-04 - mean_absolute_error: 0.0077 -
      val_loss: 32.1043 - val_mean_absolute_error: 3.6080
4380  epoch_end_callback epoch 7672 lr 1.5625e-05
4381  Epoch 7674/10000
4382   - 0s - loss: 2.8783e-04 - mean_absolute_error: 0.0082 -
      val_loss: 32.1316 - val_mean_absolute_error: 3.6108
4383  epoch_end_callback epoch 7673 lr 1.5625e-05
4384  Epoch 7675/10000
4385   - 0s - loss: 3.0833e-04 - mean_absolute_error: 0.0083 -
      val_loss: 32.0569 - val_mean_absolute_error: 3.6084
4386  epoch_end_callback epoch 7674 lr 1.5625e-05
4387  Epoch 7676/10000
4388   - 0s - loss: 3.0963e-04 - mean_absolute_error: 0.0076 -
      val_loss: 32.1176 - val_mean_absolute_error: 3.6096
4389  epoch_end_callback epoch 7675 lr 1.5625e-05
4390  Epoch 7677/10000
4391   - 0s - loss: 2.5278e-04 - mean_absolute_error: 0.0059 -
      val_loss: 32.1005 - val_mean_absolute_error: 3.6088
4392  epoch_end_callback epoch 7676 lr 1.5625e-05
4393  Epoch 7678/10000
4394   - 0s - loss: 3.1664e-04 - mean_absolute_error: 0.0089 -
      val_loss: 32.1056 - val_mean_absolute_error: 3.6094
4395  epoch_end_callback epoch 7677 lr 1.5625e-05
4396  Epoch 7679/10000
4397   - 0s - loss: 3.1296e-04 - mean_absolute_error: 0.0076 -
      val_loss: 32.0829 - val_mean_absolute_error: 3.6093
4398  epoch_end_callback epoch 7678 lr 1.5625e-05
4399  Epoch 7680/10000
4400   - 0s - loss: 3.2138e-04 - mean_absolute_error: 0.0082 -
      val_loss: 32.1045 - val_mean_absolute_error: 3.6098
4401
4402  Epoch 07680: saving model to ./model/
      model_Epoch7680_val_mean_absolute_error3.610.h5
4403  epoch_end_callback epoch 7679 lr 1.5625e-05
4404  Epoch 7681/10000
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4405   - 0s - loss: 2.7842e-04 - mean_absolute_error: 0.0072 - val_loss: 32.1040 - val_mean_absolute_error: 3.6096

4406 epoch_end_callback epoch 7680 lr 1.5625e-05

4407 Epoch 7682/10000

4408   - 0s - loss: 2.7900e-04 - mean_absolute_error: 0.0081 - val_loss: 32.0859 - val_mean_absolute_error: 3.6079

4409 epoch_end_callback epoch 7681 lr 1.5625e-05

4410 Epoch 7683/10000

4411   - 0s - loss: 3.0886e-04 - mean_absolute_error: 0.0075 - val_loss: 32.0966 - val_mean_absolute_error: 3.6100

4412 epoch_end_callback epoch 7682 lr 1.5625e-05

4413 Epoch 7684/10000

4414   - 0s - loss: 3.6013e-04 - mean_absolute_error: 0.0084 - val_loss: 32.0993 - val_mean_absolute_error: 3.6086

4415 epoch_end_callback epoch 7683 lr 1.5625e-05

4416 Epoch 7685/10000

4417   - 0s - loss: 2.6423e-04 - mean_absolute_error: 0.0061 - val_loss: 32.1101 - val_mean_absolute_error: 3.6089

4418 epoch_end_callback epoch 7684 lr 1.5625e-05

4419 Epoch 7686/10000

4420   - 0s - loss: 2.3949e-04 - mean_absolute_error: 0.0069 - val_loss: 32.1177 - val_mean_absolute_error: 3.6112

4421 epoch_end_callback epoch 7685 lr 1.5625e-05

4422 Epoch 7687/10000

4423   - 0s - loss: 2.9996e-04 - mean_absolute_error: 0.0089 - val_loss: 32.1385 - val_mean_absolute_error: 3.6112

4424 epoch_end_callback epoch 7686 lr 1.5625e-05

4425 Epoch 7688/10000

4426   - 0s - loss: 2.7681e-04 - mean_absolute_error: 0.0082 - val_loss: 32.1039 - val_mean_absolute_error: 3.6098

4427 epoch_end_callback epoch 7687 lr 1.5625e-05

4428 Epoch 7689/10000

4429   - 0s - loss: 3.1018e-04 - mean_absolute_error: 0.0081 - val_loss: 32.1060 - val_mean_absolute_error: 3.6091

4430 epoch_end_callback epoch 7688 lr 1.5625e-05

4431 Epoch 7690/10000

4432   - 0s - loss: 3.0139e-04 - mean_absolute_error: 0.0082 -

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4432  val_loss: 32.1346 - val_mean_absolute_error: 3.6099
4433
4434  Epoch 07690: saving model to ./model/
      model_Epoch7690_val_mean_absolute_error3.610.h5
4435  epoch_end_callback epoch 7689 lr 1.5625e-05
4436  Epoch 7691/10000
4437   - 0s - loss: 3.6544e-04 - mean_absolute_error: 0.0087 -
      val_loss: 32.1185 - val_mean_absolute_error: 3.6087
4438  epoch_end_callback epoch 7690 lr 1.5625e-05
4439  Epoch 7692/10000
4440   - 0s - loss: 2.8608e-04 - mean_absolute_error: 0.0069 -
      val_loss: 32.1139 - val_mean_absolute_error: 3.6090
4441  epoch_end_callback epoch 7691 lr 1.5625e-05
4442  Epoch 7693/10000
4443   - 0s - loss: 2.9835e-04 - mean_absolute_error: 0.0079 -
      val_loss: 32.1347 - val_mean_absolute_error: 3.6111
4444  epoch_end_callback epoch 7692 lr 1.5625e-05
4445  Epoch 7694/10000
4446   - 0s - loss: 2.6270e-04 - mean_absolute_error: 0.0074 -
      val_loss: 32.1217 - val_mean_absolute_error: 3.6091
4447  epoch_end_callback epoch 7693 lr 1.5625e-05
4448  Epoch 7695/10000
4449   - 0s - loss: 3.3431e-04 - mean_absolute_error: 0.0086 -
      val_loss: 32.1065 - val_mean_absolute_error: 3.6096
4450  epoch_end_callback epoch 7694 lr 1.5625e-05
4451  Epoch 7696/10000
4452   - 0s - loss: 3.2943e-04 - mean_absolute_error: 0.0081 -
      val_loss: 32.1005 - val_mean_absolute_error: 3.6090
4453  epoch_end_callback epoch 7695 lr 1.5625e-05
4454  Epoch 7697/10000
4455   - 0s - loss: 2.7351e-04 - mean_absolute_error: 0.0073 -
      val_loss: 32.1235 - val_mean_absolute_error: 3.6098
4456  epoch_end_callback epoch 7696 lr 1.5625e-05
4457  Epoch 7698/10000
4458   - 0s - loss: 3.0676e-04 - mean_absolute_error: 0.0080 -
      val_loss: 32.1311 - val_mean_absolute_error: 3.6096
4459  epoch_end_callback epoch 7697 lr 1.5625e-05
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4460  Epoch 7699/10000
4461   - 0s - loss: 2.4217e-04 - mean_absolute_error: 0.0068 -
      val_loss: 32.1208 - val_mean_absolute_error: 3.6087
4462  epoch_end_callback epoch 7698 lr 1.5625e-05
4463  Epoch 7700/10000
4464   - 0s - loss: 3.1214e-04 - mean_absolute_error: 0.0087 -
      val_loss: 32.1256 - val_mean_absolute_error: 3.6100
4465
4466  Epoch 07700: saving model to ./model/
      model_Epoch7700_val_mean_absolute_error3.610.h5
4467  epoch_end_callback epoch 7699 lr 1.5625e-05
4468  Epoch 7701/10000
4469   - 0s - loss: 3.0739e-04 - mean_absolute_error: 0.0086 -
      val_loss: 32.0956 - val_mean_absolute_error: 3.6071
4470  epoch_end_callback epoch 7700 lr 1.5625e-05
4471  Epoch 7702/10000
4472   - 0s - loss: 2.8176e-04 - mean_absolute_error: 0.0071 -
      val_loss: 32.1093 - val_mean_absolute_error: 3.6083
4473  epoch_end_callback epoch 7701 lr 1.5625e-05
4474  Epoch 7703/10000
4475   - 0s - loss: 3.3273e-04 - mean_absolute_error: 0.0088 -
      val_loss: 32.1092 - val_mean_absolute_error: 3.6087
4476  epoch_end_callback epoch 7702 lr 1.5625e-05
4477  Epoch 7704/10000
4478   - 0s - loss: 2.6357e-04 - mean_absolute_error: 0.0070 -
      val_loss: 32.1102 - val_mean_absolute_error: 3.6094
4479  epoch_end_callback epoch 7703 lr 1.5625e-05
4480  Epoch 7705/10000
4481   - 0s - loss: 3.1404e-04 - mean_absolute_error: 0.0083 -
      val_loss: 32.1132 - val_mean_absolute_error: 3.6103
4482  epoch_end_callback epoch 7704 lr 1.5625e-05
4483  Epoch 7706/10000
4484   - 0s - loss: 2.9446e-04 - mean_absolute_error: 0.0082 -
      val_loss: 32.1174 - val_mean_absolute_error: 3.6102
4485  epoch_end_callback epoch 7705 lr 1.5625e-05
4486  Epoch 7707/10000
4487   - 0s - loss: 2.8945e-04 - mean_absolute_error: 0.0073 -
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4487  val_loss: 32.1471 - val_mean_absolute_error: 3.6098
4488  epoch_end_callback epoch 7706 lr 1.5625e-05
4489  Epoch 7708/10000
4490   - 0s - loss: 2.5089e-04 - mean_absolute_error: 0.0076 -
      val_loss: 32.0862 - val_mean_absolute_error: 3.6090
4491  epoch_end_callback epoch 7707 lr 1.5625e-05
4492  Epoch 7709/10000
4493   - 0s - loss: 3.4129e-04 - mean_absolute_error: 0.0088 -
      val_loss: 32.1141 - val_mean_absolute_error: 3.6102
4494  epoch_end_callback epoch 7708 lr 1.5625e-05
4495  Epoch 7710/10000
4496   - 0s - loss: 2.8207e-04 - mean_absolute_error: 0.0078 -
      val_loss: 32.1014 - val_mean_absolute_error: 3.6085
4497
4498  Epoch 07710: saving model to ./model/
      model_Epoch7710_val_mean_absolute_error3.609.h5
4499  epoch_end_callback epoch 7709 lr 1.5625e-05
4500  Epoch 7711/10000
4501   - 0s - loss: 2.9238e-04 - mean_absolute_error: 0.0078 -
      val_loss: 32.1137 - val_mean_absolute_error: 3.6093
4502  epoch_end_callback epoch 7710 lr 1.5625e-05
4503  Epoch 7712/10000
4504   - 0s - loss: 2.9493e-04 - mean_absolute_error: 0.0075 -
      val_loss: 32.1110 - val_mean_absolute_error: 3.6106
4505  epoch_end_callback epoch 7711 lr 1.5625e-05
4506  Epoch 7713/10000
4507   - 0s - loss: 3.4185e-04 - mean_absolute_error: 0.0082 -
      val_loss: 32.0928 - val_mean_absolute_error: 3.6090
4508  epoch_end_callback epoch 7712 lr 1.5625e-05
4509  Epoch 7714/10000
4510   - 0s - loss: 2.8212e-04 - mean_absolute_error: 0.0079 -
      val_loss: 32.1445 - val_mean_absolute_error: 3.6101
4511  epoch_end_callback epoch 7713 lr 1.5625e-05
4512  Epoch 7715/10000
4513   - 0s - loss: 2.9940e-04 - mean_absolute_error: 0.0082 -
      val_loss: 32.1084 - val_mean_absolute_error: 3.6103
4514  epoch_end_callback epoch 7714 lr 1.5625e-05
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4515  Epoch 7716/10000
4516   - 0s - loss: 2.9026e-04 - mean_absolute_error: 0.0076 -
      val_loss: 32.0987 - val_mean_absolute_error: 3.6098
4517  epoch_end_callback epoch 7715 lr 1.5625e-05
4518  Epoch 7717/10000
4519   - 0s - loss: 3.1472e-04 - mean_absolute_error: 0.0086 -
      val_loss: 32.1181 - val_mean_absolute_error: 3.6110
4520  epoch_end_callback epoch 7716 lr 1.5625e-05
4521  Epoch 7718/10000
4522   - 0s - loss: 3.1909e-04 - mean_absolute_error: 0.0068 -
      val_loss: 32.1208 - val_mean_absolute_error: 3.6108
4523  epoch_end_callback epoch 7717 lr 1.5625e-05
4524  Epoch 7719/10000
4525   - 0s - loss: 2.2290e-04 - mean_absolute_error: 0.0062 -
      val_loss: 32.0871 - val_mean_absolute_error: 3.6082
4526  epoch_end_callback epoch 7718 lr 1.5625e-05
4527  Epoch 7720/10000
4528   - 0s - loss: 3.2909e-04 - mean_absolute_error: 0.0087 -
      val_loss: 32.1009 - val_mean_absolute_error: 3.6111
4529
4530  Epoch 07720: saving model to ./model/
      model_Epoch7720_val_mean_absolute_error3.611.h5
4531  epoch_end_callback epoch 7719 lr 1.5625e-05
4532  Epoch 7721/10000
4533   - 0s - loss: 2.7444e-04 - mean_absolute_error: 0.0080 -
      val_loss: 32.1042 - val_mean_absolute_error: 3.6103
4534  epoch_end_callback epoch 7720 lr 1.5625e-05
4535  Epoch 7722/10000
4536   - 0s - loss: 2.9934e-04 - mean_absolute_error: 0.0079 -
      val_loss: 32.0931 - val_mean_absolute_error: 3.6079
4537  epoch_end_callback epoch 7721 lr 1.5625e-05
4538  Epoch 7723/10000
4539   - 0s - loss: 3.0942e-04 - mean_absolute_error: 0.0086 -
      val_loss: 32.0581 - val_mean_absolute_error: 3.6066
4540  epoch_end_callback epoch 7722 lr 1.5625e-05
4541  Epoch 7724/10000
4542   - 0s - loss: 2.5522e-04 - mean_absolute_error: 0.0073 -
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4542  val_loss: 32.1113 - val_mean_absolute_error: 3.6080
4543  epoch_end_callback epoch 7723 lr 1.5625e-05
4544  Epoch 7725/10000
4545   - 0s - loss: 2.8287e-04 - mean_absolute_error: 0.0079 -
      val_loss: 32.1115 - val_mean_absolute_error: 3.6097
4546  epoch_end_callback epoch 7724 lr 1.5625e-05
4547  Epoch 7726/10000
4548   - 0s - loss: 2.6478e-04 - mean_absolute_error: 0.0077 -
      val_loss: 32.0978 - val_mean_absolute_error: 3.6085
4549  epoch_end_callback epoch 7725 lr 1.5625e-05
4550  Epoch 7727/10000
4551   - 0s - loss: 3.1872e-04 - mean_absolute_error: 0.0082 -
      val_loss: 32.1146 - val_mean_absolute_error: 3.6107
4552  epoch_end_callback epoch 7726 lr 1.5625e-05
4553  Epoch 7728/10000
4554   - 0s - loss: 2.7966e-04 - mean_absolute_error: 0.0074 -
      val_loss: 32.1022 - val_mean_absolute_error: 3.6072
4555  epoch_end_callback epoch 7727 lr 1.5625e-05
4556  Epoch 7729/10000
4557   - 0s - loss: 3.4168e-04 - mean_absolute_error: 0.0084 -
      val_loss: 32.1035 - val_mean_absolute_error: 3.6090
4558  epoch_end_callback epoch 7728 lr 1.5625e-05
4559  Epoch 7730/10000
4560   - 0s - loss: 2.6613e-04 - mean_absolute_error: 0.0066 -
      val_loss: 32.1085 - val_mean_absolute_error: 3.6098
4561
4562  Epoch 07730: saving model to ./model/
      model_Epoch7730_val_mean_absolute_error3.610.h5
4563  epoch_end_callback epoch 7729 lr 1.5625e-05
4564  Epoch 7731/10000
4565   - 0s - loss: 2.9270e-04 - mean_absolute_error: 0.0078 -
      val_loss: 32.1183 - val_mean_absolute_error: 3.6105
4566  epoch_end_callback epoch 7730 lr 1.5625e-05
4567  Epoch 7732/10000
4568   - 0s - loss: 2.7853e-04 - mean_absolute_error: 0.0074 -
      val_loss: 32.1024 - val_mean_absolute_error: 3.6086
4569  epoch_end_callback epoch 7731 lr 1.5625e-05
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4570  Epoch 7733/10000
4571   - 0s - loss: 3.0800e-04 - mean_absolute_error: 0.0080 -
      val_loss: 32.1190 - val_mean_absolute_error: 3.6109
4572  epoch_end_callback epoch 7732 lr 1.5625e-05
4573  Epoch 7734/10000
4574   - 0s - loss: 2.6810e-04 - mean_absolute_error: 0.0058 -
      val_loss: 32.0981 - val_mean_absolute_error: 3.6096
4575  epoch_end_callback epoch 7733 lr 1.5625e-05
4576  Epoch 7735/10000
4577   - 0s - loss: 3.1731e-04 - mean_absolute_error: 0.0083 -
      val_loss: 32.1245 - val_mean_absolute_error: 3.6113
4578  epoch_end_callback epoch 7734 lr 1.5625e-05
4579  Epoch 7736/10000
4580   - 0s - loss: 2.8737e-04 - mean_absolute_error: 0.0077 -
      val_loss: 32.0770 - val_mean_absolute_error: 3.6089
4581  epoch_end_callback epoch 7735 lr 1.5625e-05
4582  Epoch 7737/10000
4583   - 0s - loss: 2.7868e-04 - mean_absolute_error: 0.0077 -
      val_loss: 32.0985 - val_mean_absolute_error: 3.6089
4584  epoch_end_callback epoch 7736 lr 1.5625e-05
4585  Epoch 7738/10000
4586   - 0s - loss: 3.0440e-04 - mean_absolute_error: 0.0078 -
      val_loss: 32.1085 - val_mean_absolute_error: 3.6080
4587  epoch_end_callback epoch 7737 lr 1.5625e-05
4588  Epoch 7739/10000
4589   - 0s - loss: 2.8725e-04 - mean_absolute_error: 0.0077 -
      val_loss: 32.1237 - val_mean_absolute_error: 3.6116
4590  epoch_end_callback epoch 7738 lr 1.5625e-05
4591  Epoch 7740/10000
4592   - 0s - loss: 2.9442e-04 - mean_absolute_error: 0.0076 -
      val_loss: 32.1097 - val_mean_absolute_error: 3.6103
4593
4594  Epoch 07740: saving model to ./model/
      model_Epoch7740_val_mean_absolute_error3.610.h5
4595  epoch_end_callback epoch 7739 lr 1.5625e-05
4596  Epoch 7741/10000
4597   - 0s - loss: 2.7829e-04 - mean_absolute_error: 0.0075 -
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4597  val_loss: 32.1006 - val_mean_absolute_error: 3.6101
4598  epoch_end_callback epoch 7740 lr 1.5625e-05
4599  Epoch 7742/10000
4600   - 0s - loss: 3.1987e-04 - mean_absolute_error: 0.0074 -
      val_loss: 32.1290 - val_mean_absolute_error: 3.6102
4601  epoch_end_callback epoch 7741 lr 1.5625e-05
4602  Epoch 7743/10000
4603   - 0s - loss: 2.8888e-04 - mean_absolute_error: 0.0072 -
      val_loss: 32.1384 - val_mean_absolute_error: 3.6103
4604  epoch_end_callback epoch 7742 lr 1.5625e-05
4605  Epoch 7744/10000
4606   - 0s - loss: 2.7679e-04 - mean_absolute_error: 0.0082 -
      val_loss: 32.1272 - val_mean_absolute_error: 3.6102
4607  epoch_end_callback epoch 7743 lr 1.5625e-05
4608  Epoch 7745/10000
4609   - 0s - loss: 2.8292e-04 - mean_absolute_error: 0.0081 -
      val_loss: 32.1335 - val_mean_absolute_error: 3.6115
4610  epoch_end_callback epoch 7744 lr 1.5625e-05
4611  Epoch 7746/10000
4612   - 0s - loss: 2.9176e-04 - mean_absolute_error: 0.0081 -
      val_loss: 32.1392 - val_mean_absolute_error: 3.6111
4613  epoch_end_callback epoch 7745 lr 1.5625e-05
4614  Epoch 7747/10000
4615   - 0s - loss: 3.2894e-04 - mean_absolute_error: 0.0079 -
      val_loss: 32.1172 - val_mean_absolute_error: 3.6107
4616  epoch_end_callback epoch 7746 lr 1.5625e-05
4617  Epoch 7748/10000
4618   - 0s - loss: 2.8929e-04 - mean_absolute_error: 0.0078 -
      val_loss: 32.1162 - val_mean_absolute_error: 3.6095
4619  epoch_end_callback epoch 7747 lr 1.5625e-05
4620  Epoch 7749/10000
4621   - 0s - loss: 2.7984e-04 - mean_absolute_error: 0.0073 -
      val_loss: 32.1075 - val_mean_absolute_error: 3.6110
4622  epoch_end_callback epoch 7748 lr 1.5625e-05
4623  Epoch 7750/10000
4624   - 0s - loss: 3.2341e-04 - mean_absolute_error: 0.0086 -
      val_loss: 32.0913 - val_mean_absolute_error: 3.6098
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4625
4626  Epoch 07750: saving model to ./model/
       model_Epoch7750_val_mean_absolute_error3.610.h5
4627  epoch_end_callback epoch 7749 lr 1.5625e-05
4628  Epoch 7751/10000
4629   - 0s - loss: 2.9367e-04 - mean_absolute_error: 0.0086 -
       val_loss: 32.1113 - val_mean_absolute_error: 3.6101
4630  epoch_end_callback epoch 7750 lr 1.5625e-05
4631  Epoch 7752/10000
4632   - 0s - loss: 3.1829e-04 - mean_absolute_error: 0.0076 -
       val_loss: 32.0936 - val_mean_absolute_error: 3.6094
4633  epoch_end_callback epoch 7751 lr 1.5625e-05
4634  Epoch 7753/10000
4635   - 0s - loss: 2.8260e-04 - mean_absolute_error: 0.0081 -
       val_loss: 32.1094 - val_mean_absolute_error: 3.6096
4636  epoch_end_callback epoch 7752 lr 1.5625e-05
4637  Epoch 7754/10000
4638   - 0s - loss: 2.9638e-04 - mean_absolute_error: 0.0080 -
       val_loss: 32.1068 - val_mean_absolute_error: 3.6087
4639  epoch_end_callback epoch 7753 lr 1.5625e-05
4640  Epoch 7755/10000
4641   - 0s - loss: 3.2521e-04 - mean_absolute_error: 0.0083 -
       val_loss: 32.1047 - val_mean_absolute_error: 3.6101
4642  epoch_end_callback epoch 7754 lr 1.5625e-05
4643  Epoch 7756/10000
4644   - 0s - loss: 2.5381e-04 - mean_absolute_error: 0.0070 -
       val_loss: 32.1069 - val_mean_absolute_error: 3.6103
4645  epoch_end_callback epoch 7755 lr 1.5625e-05
4646  Epoch 7757/10000
4647   - 0s - loss: 2.9228e-04 - mean_absolute_error: 0.0078 -
       val_loss: 32.1399 - val_mean_absolute_error: 3.6119
4648  epoch_end_callback epoch 7756 lr 1.5625e-05
4649  Epoch 7758/10000
4650   - 0s - loss: 2.9831e-04 - mean_absolute_error: 0.0081 -
       val_loss: 32.0954 - val_mean_absolute_error: 3.6073
4651  epoch_end_callback epoch 7757 lr 1.5625e-05
4652  Epoch 7759/10000
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4653    - 0s - loss: 3.1611e-04 - mean_absolute_error: 0.0080 -
        val_loss: 32.0739 - val_mean_absolute_error: 3.6086
4654   epoch_end_callback epoch 7758 lr 1.5625e-05
4655   Epoch 7760/10000
4656    - 0s - loss: 2.7566e-04 - mean_absolute_error: 0.0067 -
        val_loss: 32.1210 - val_mean_absolute_error: 3.6095
4657
4658   Epoch 07760: saving model to ./model/
        model_Epoch7760_val_mean_absolute_error3.610.h5
4659   epoch_end_callback epoch 7759 lr 1.5625e-05
4660   Epoch 7761/10000
4661    - 0s - loss: 3.0171e-04 - mean_absolute_error: 0.0075 -
        val_loss: 32.1058 - val_mean_absolute_error: 3.6105
4662   epoch_end_callback epoch 7760 lr 1.5625e-05
4663   Epoch 7762/10000
4664    - 0s - loss: 2.8686e-04 - mean_absolute_error: 0.0078 -
        val_loss: 32.1116 - val_mean_absolute_error: 3.6097
4665   epoch_end_callback epoch 7761 lr 1.5625e-05
4666   Epoch 7763/10000
4667    - 0s - loss: 3.0098e-04 - mean_absolute_error: 0.0080 -
        val_loss: 32.1224 - val_mean_absolute_error: 3.6104
4668   epoch_end_callback epoch 7762 lr 1.5625e-05
4669   Epoch 7764/10000
4670    - 0s - loss: 2.4190e-04 - mean_absolute_error: 0.0073 -
        val_loss: 32.1247 - val_mean_absolute_error: 3.6111
4671   epoch_end_callback epoch 7763 lr 1.5625e-05
4672   Epoch 7765/10000
4673    - 0s - loss: 3.0828e-04 - mean_absolute_error: 0.0084 -
        val_loss: 32.1218 - val_mean_absolute_error: 3.6101
4674   epoch_end_callback epoch 7764 lr 1.5625e-05
4675   Epoch 7766/10000
4676    - 0s - loss: 2.5819e-04 - mean_absolute_error: 0.0076 -
        val_loss: 32.1418 - val_mean_absolute_error: 3.6107
4677   epoch_end_callback epoch 7765 lr 1.5625e-05
4678   Epoch 7767/10000
4679    - 0s - loss: 2.8344e-04 - mean_absolute_error: 0.0082 -
        val_loss: 32.1146 - val_mean_absolute_error: 3.6110
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4680  epoch_end_callback epoch 7766 lr 1.5625e-05
4681  Epoch 7768/10000
4682   - 0s - loss: 2.9476e-04 - mean_absolute_error: 0.0084 -
      val_loss: 32.1135 - val_mean_absolute_error: 3.6067
4683  epoch_end_callback epoch 7767 lr 1.5625e-05
4684  Epoch 7769/10000
4685   - 0s - loss: 2.8975e-04 - mean_absolute_error: 0.0078 -
      val_loss: 32.1096 - val_mean_absolute_error: 3.6098
4686  epoch_end_callback epoch 7768 lr 1.5625e-05
4687  Epoch 7770/10000
4688   - 0s - loss: 3.0568e-04 - mean_absolute_error: 0.0077 -
      val_loss: 32.1178 - val_mean_absolute_error: 3.6098
4689
4690  Epoch 07770: saving model to ./model/
      model_Epoch7770_val_mean_absolute_error3.610.h5
4691  epoch_end_callback epoch 7769 lr 1.5625e-05
4692  Epoch 7771/10000
4693   - 0s - loss: 3.0767e-04 - mean_absolute_error: 0.0075 -
      val_loss: 32.1172 - val_mean_absolute_error: 3.6106
4694  epoch_end_callback epoch 7770 lr 1.5625e-05
4695  Epoch 7772/10000
4696   - 0s - loss: 2.8390e-04 - mean_absolute_error: 0.0073 -
      val_loss: 32.1486 - val_mean_absolute_error: 3.6087
4697  epoch_end_callback epoch 7771 lr 1.5625e-05
4698  Epoch 7773/10000
4699   - 0s - loss: 2.7850e-04 - mean_absolute_error: 0.0076 -
      val_loss: 32.1238 - val_mean_absolute_error: 3.6100
4700  epoch_end_callback epoch 7772 lr 1.5625e-05
4701  Epoch 7774/10000
4702   - 0s - loss: 2.8929e-04 - mean_absolute_error: 0.0083 -
      val_loss: 32.1137 - val_mean_absolute_error: 3.6106
4703  epoch_end_callback epoch 7773 lr 1.5625e-05
4704  Epoch 7775/10000
4705   - 0s - loss: 3.0110e-04 - mean_absolute_error: 0.0077 -
      val_loss: 32.1276 - val_mean_absolute_error: 3.6103
4706  epoch_end_callback epoch 7774 lr 1.5625e-05
4707  Epoch 7776/10000
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4708    - 0s - loss: 2.8036e-04 - mean_absolute_error: 0.0072 -
        val_loss: 32.1219 - val_mean_absolute_error: 3.6105
4709   epoch_end_callback epoch 7775 lr 1.5625e-05
4710   Epoch 7777/10000
4711    - 0s - loss: 2.8114e-04 - mean_absolute_error: 0.0080 -
        val_loss: 32.0917 - val_mean_absolute_error: 3.6095
4712   epoch_end_callback epoch 7776 lr 1.5625e-05
4713   Epoch 7778/10000
4714    - 0s - loss: 3.0730e-04 - mean_absolute_error: 0.0080 -
        val_loss: 32.1230 - val_mean_absolute_error: 3.6107
4715   epoch_end_callback epoch 7777 lr 1.5625e-05
4716   Epoch 7779/10000
4717    - 0s - loss: 2.8253e-04 - mean_absolute_error: 0.0083 -
        val_loss: 32.1018 - val_mean_absolute_error: 3.6104
4718   epoch_end_callback epoch 7778 lr 1.5625e-05
4719   Epoch 7780/10000
4720    - 0s - loss: 2.7419e-04 - mean_absolute_error: 0.0084 -
        val_loss: 32.1049 - val_mean_absolute_error: 3.6100
4721
4722   Epoch 07780: saving model to ./model/
        model_Epoch7780_val_mean_absolute_error3.610.h5
4723   epoch_end_callback epoch 7779 lr 1.5625e-05
4724   Epoch 7781/10000
4725    - 0s - loss: 3.0894e-04 - mean_absolute_error: 0.0090 -
        val_loss: 32.1381 - val_mean_absolute_error: 3.6111
4726   epoch_end_callback epoch 7780 lr 1.5625e-05
4727   Epoch 7782/10000
4728    - 0s - loss: 3.0412e-04 - mean_absolute_error: 0.0077 -
        val_loss: 32.0999 - val_mean_absolute_error: 3.6101
4729   epoch_end_callback epoch 7781 lr 1.5625e-05
4730   Epoch 7783/10000
4731    - 0s - loss: 2.7072e-04 - mean_absolute_error: 0.0071 -
        val_loss: 32.0854 - val_mean_absolute_error: 3.6077
4732   epoch_end_callback epoch 7782 lr 1.5625e-05
4733   Epoch 7784/10000
4734    - 0s - loss: 2.8049e-04 - mean_absolute_error: 0.0074 -
        val_loss: 32.0705 - val_mean_absolute_error: 3.6093
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4735  epoch_end_callback epoch 7783 lr 1.5625e-05
4736  Epoch 7785/10000
4737   - 0s - loss: 2.9977e-04 - mean_absolute_error: 0.0071 -
      val_loss: 32.0937 - val_mean_absolute_error: 3.6084
4738  epoch_end_callback epoch 7784 lr 1.5625e-05
4739  Epoch 7786/10000
4740   - 0s - loss: 2.9480e-04 - mean_absolute_error: 0.0080 -
      val_loss: 32.0915 - val_mean_absolute_error: 3.6076
4741  epoch_end_callback epoch 7785 lr 1.5625e-05
4742  Epoch 7787/10000
4743   - 0s - loss: 2.8037e-04 - mean_absolute_error: 0.0075 -
      val_loss: 32.1183 - val_mean_absolute_error: 3.6086
4744  epoch_end_callback epoch 7786 lr 1.5625e-05
4745  Epoch 7788/10000
4746   - 0s - loss: 2.9115e-04 - mean_absolute_error: 0.0079 -
      val_loss: 32.1212 - val_mean_absolute_error: 3.6103
4747  epoch_end_callback epoch 7787 lr 1.5625e-05
4748  Epoch 7789/10000
4749   - 0s - loss: 3.0542e-04 - mean_absolute_error: 0.0081 -
      val_loss: 32.1203 - val_mean_absolute_error: 3.6096
4750  epoch_end_callback epoch 7788 lr 1.5625e-05
4751  Epoch 7790/10000
4752   - 0s - loss: 2.7505e-04 - mean_absolute_error: 0.0076 -
      val_loss: 32.0973 - val_mean_absolute_error: 3.6104
4753
4754  Epoch 07790: saving model to ./model/
      model_Epoch7790_val_mean_absolute_error3.610.h5
4755  epoch_end_callback epoch 7789 lr 1.5625e-05
4756  Epoch 7791/10000
4757   - 0s - loss: 2.6410e-04 - mean_absolute_error: 0.0069 -
      val_loss: 32.1213 - val_mean_absolute_error: 3.6102
4758  epoch_end_callback epoch 7790 lr 1.5625e-05
4759  Epoch 7792/10000
4760   - 0s - loss: 3.1982e-04 - mean_absolute_error: 0.0085 -
      val_loss: 32.1116 - val_mean_absolute_error: 3.6088
4761  epoch_end_callback epoch 7791 lr 1.5625e-05
4762  Epoch 7793/10000
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4763    - 0s - loss: 2.8547e-04 - mean_absolute_error: 0.0069 -
        val_loss: 32.1315 - val_mean_absolute_error: 3.6099
4764  epoch_end_callback epoch 7792 lr 1.5625e-05
4765  Epoch 7794/10000
4766    - 0s - loss: 2.7048e-04 - mean_absolute_error: 0.0077 -
        val_loss: 32.1092 - val_mean_absolute_error: 3.6098
4767  epoch_end_callback epoch 7793 lr 1.5625e-05
4768  Epoch 7795/10000
4769    - 0s - loss: 2.7633e-04 - mean_absolute_error: 0.0071 -
        val_loss: 32.1115 - val_mean_absolute_error: 3.6096
4770  epoch_end_callback epoch 7794 lr 1.5625e-05
4771  Epoch 7796/10000
4772    - 0s - loss: 3.1993e-04 - mean_absolute_error: 0.0085 -
        val_loss: 32.0987 - val_mean_absolute_error: 3.6096
4773  epoch_end_callback epoch 7795 lr 1.5625e-05
4774  Epoch 7797/10000
4775    - 0s - loss: 2.2852e-04 - mean_absolute_error: 0.0065 -
        val_loss: 32.1429 - val_mean_absolute_error: 3.6111
4776  epoch_end_callback epoch 7796 lr 1.5625e-05
4777  Epoch 7798/10000
4778    - 0s - loss: 2.8401e-04 - mean_absolute_error: 0.0076 -
        val_loss: 32.1060 - val_mean_absolute_error: 3.6098
4779  epoch_end_callback epoch 7797 lr 1.5625e-05
4780  Epoch 7799/10000
4781    - 0s - loss: 3.0761e-04 - mean_absolute_error: 0.0071 -
        val_loss: 32.1178 - val_mean_absolute_error: 3.6106
4782  epoch_end_callback epoch 7798 lr 1.5625e-05
4783  Epoch 7800/10000
4784    - 0s - loss: 2.7418e-04 - mean_absolute_error: 0.0075 -
        val_loss: 32.1075 - val_mean_absolute_error: 3.6099
4785
4786  Epoch 07800: saving model to ./model/
        model_Epoch7800_val_mean_absolute_error3.610.h5
4787  epoch_end_callback epoch 7799 lr 1.5625e-05
4788  Epoch 7801/10000
4789    - 0s - loss: 2.9517e-04 - mean_absolute_error: 0.0073 -
        val_loss: 32.1185 - val_mean_absolute_error: 3.6113
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4790 epoch_end_callback epoch 7800 lr 1.5625e-05
4791 Epoch 7802/10000
4792  - 0s - loss: 2.7559e-04 - mean_absolute_error: 0.0076 -
     val_loss: 32.1242 - val_mean_absolute_error: 3.6103
4793 epoch_end_callback epoch 7801 lr 1.5625e-05
4794 Epoch 7803/10000
4795  - 0s - loss: 2.7836e-04 - mean_absolute_error: 0.0075 -
     val_loss: 32.1149 - val_mean_absolute_error: 3.6121
4796 epoch_end_callback epoch 7802 lr 1.5625e-05
4797 Epoch 7804/10000
4798  - 0s - loss: 2.8244e-04 - mean_absolute_error: 0.0084 -
     val_loss: 32.0962 - val_mean_absolute_error: 3.6089
4799 epoch_end_callback epoch 7803 lr 1.5625e-05
4800 Epoch 7805/10000
4801  - 0s - loss: 2.8605e-04 - mean_absolute_error: 0.0083 -
     val_loss: 32.1115 - val_mean_absolute_error: 3.6095
4802 epoch_end_callback epoch 7804 lr 1.5625e-05
4803 Epoch 7806/10000
4804  - 0s - loss: 2.7641e-04 - mean_absolute_error: 0.0070 -
     val_loss: 32.1307 - val_mean_absolute_error: 3.6105
4805 epoch_end_callback epoch 7805 lr 1.5625e-05
4806 Epoch 7807/10000
4807  - 0s - loss: 2.6158e-04 - mean_absolute_error: 0.0079 -
     val_loss: 32.1156 - val_mean_absolute_error: 3.6104
4808 epoch_end_callback epoch 7806 lr 1.5625e-05
4809 Epoch 7808/10000
4810  - 0s - loss: 3.1614e-04 - mean_absolute_error: 0.0087 -
     val_loss: 32.1305 - val_mean_absolute_error: 3.6115
4811 epoch_end_callback epoch 7807 lr 1.5625e-05
4812 Epoch 7809/10000
4813  - 0s - loss: 3.0069e-04 - mean_absolute_error: 0.0074 -
     val_loss: 32.1242 - val_mean_absolute_error: 3.6119
4814 epoch_end_callback epoch 7808 lr 1.5625e-05
4815 Epoch 7810/10000
4816  - 0s - loss: 2.8438e-04 - mean_absolute_error: 0.0082 -
     val_loss: 32.1133 - val_mean_absolute_error: 3.6087
4817
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4818  Epoch 07810: saving model to ./model/
      model_Epoch7810_val_mean_absolute_error3.609.h5
4819  epoch_end_callback epoch 7809 lr 1.5625e-05
4820  Epoch 7811/10000
4821   - 0s - loss: 2.6753e-04 - mean_absolute_error: 0.0068 -
      val_loss: 32.1313 - val_mean_absolute_error: 3.6105
4822  epoch_end_callback epoch 7810 lr 1.5625e-05
4823  Epoch 7812/10000
4824   - 0s - loss: 3.1640e-04 - mean_absolute_error: 0.0091 -
      val_loss: 32.1119 - val_mean_absolute_error: 3.6114
4825  epoch_end_callback epoch 7811 lr 1.5625e-05
4826  Epoch 7813/10000
4827   - 0s - loss: 2.8859e-04 - mean_absolute_error: 0.0077 -
      val_loss: 32.1421 - val_mean_absolute_error: 3.6114
4828  epoch_end_callback epoch 7812 lr 1.5625e-05
4829  Epoch 7814/10000
4830   - 0s - loss: 3.0876e-04 - mean_absolute_error: 0.0082 -
      val_loss: 32.1438 - val_mean_absolute_error: 3.6111
4831  epoch_end_callback epoch 7813 lr 1.5625e-05
4832  Epoch 7815/10000
4833   - 0s - loss: 2.7982e-04 - mean_absolute_error: 0.0070 -
      val_loss: 32.0930 - val_mean_absolute_error: 3.6104
4834  epoch_end_callback epoch 7814 lr 1.5625e-05
4835  Epoch 7816/10000
4836   - 0s - loss: 2.7656e-04 - mean_absolute_error: 0.0078 -
      val_loss: 32.1002 - val_mean_absolute_error: 3.6098
4837  epoch_end_callback epoch 7815 lr 1.5625e-05
4838  Epoch 7817/10000
4839   - 0s - loss: 2.9564e-04 - mean_absolute_error: 0.0084 -
      val_loss: 32.1281 - val_mean_absolute_error: 3.6109
4840  epoch_end_callback epoch 7816 lr 1.5625e-05
4841  Epoch 7818/10000
4842   - 0s - loss: 3.1609e-04 - mean_absolute_error: 0.0089 -
      val_loss: 32.1088 - val_mean_absolute_error: 3.6097
4843  epoch_end_callback epoch 7817 lr 1.5625e-05
4844  Epoch 7819/10000
4845   - 0s - loss: 2.6091e-04 - mean_absolute_error: 0.0067 -
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4845  val_loss: 32.1051 - val_mean_absolute_error: 3.6099
4846  epoch_end_callback epoch 7818 lr 1.5625e-05
4847  Epoch 7820/10000
4848   - 0s - loss: 3.2286e-04 - mean_absolute_error: 0.0085 -
      val_loss: 32.1221 - val_mean_absolute_error: 3.6112
4849
4850  Epoch 07820: saving model to ./model/
      model_Epoch7820_val_mean_absolute_error3.611.h5
4851  epoch_end_callback epoch 7819 lr 1.5625e-05
4852  Epoch 7821/10000
4853   - 0s - loss: 2.7852e-04 - mean_absolute_error: 0.0074 -
      val_loss: 32.1349 - val_mean_absolute_error: 3.6095
4854  epoch_end_callback epoch 7820 lr 1.5625e-05
4855  Epoch 7822/10000
4856   - 0s - loss: 2.5464e-04 - mean_absolute_error: 0.0072 -
      val_loss: 32.1262 - val_mean_absolute_error: 3.6105
4857  epoch_end_callback epoch 7821 lr 1.5625e-05
4858  Epoch 7823/10000
4859   - 0s - loss: 2.9912e-04 - mean_absolute_error: 0.0080 -
      val_loss: 32.1148 - val_mean_absolute_error: 3.6100
4860  epoch_end_callback epoch 7822 lr 1.5625e-05
4861  Epoch 7824/10000
4862   - 0s - loss: 2.9718e-04 - mean_absolute_error: 0.0074 -
      val_loss: 32.1113 - val_mean_absolute_error: 3.6101
4863  epoch_end_callback epoch 7823 lr 1.5625e-05
4864  Epoch 7825/10000
4865   - 0s - loss: 2.7921e-04 - mean_absolute_error: 0.0076 -
      val_loss: 32.1006 - val_mean_absolute_error: 3.6095
4866  epoch_end_callback epoch 7824 lr 1.5625e-05
4867  Epoch 7826/10000
4868   - 0s - loss: 2.7984e-04 - mean_absolute_error: 0.0070 -
      val_loss: 32.1399 - val_mean_absolute_error: 3.6119
4869  epoch_end_callback epoch 7825 lr 1.5625e-05
4870  Epoch 7827/10000
4871   - 0s - loss: 2.9642e-04 - mean_absolute_error: 0.0087 -
      val_loss: 32.0752 - val_mean_absolute_error: 3.6099
4872  epoch_end_callback epoch 7826 lr 1.5625e-05
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4873 Epoch 7828/10000
4874  - 0s - loss: 3.0590e-04 - mean_absolute_error: 0.0080 -
     val_loss: 32.1184 - val_mean_absolute_error: 3.6106
4875 epoch_end_callback epoch 7827 lr 1.5625e-05
4876 Epoch 7829/10000
4877  - 0s - loss: 2.9018e-04 - mean_absolute_error: 0.0081 -
     val_loss: 32.1072 - val_mean_absolute_error: 3.6102
4878 epoch_end_callback epoch 7828 lr 1.5625e-05
4879 Epoch 7830/10000
4880  - 0s - loss: 2.7504e-04 - mean_absolute_error: 0.0073 -
     val_loss: 32.1212 - val_mean_absolute_error: 3.6106
4881
4882 Epoch 07830: saving model to ./model/
     model_Epoch7830_val_mean_absolute_error3.611.h5
4883 epoch_end_callback epoch 7829 lr 1.5625e-05
4884 Epoch 7831/10000
4885  - 0s - loss: 3.2564e-04 - mean_absolute_error: 0.0088 -
     val_loss: 32.1019 - val_mean_absolute_error: 3.6093
4886 epoch_end_callback epoch 7830 lr 1.5625e-05
4887 Epoch 7832/10000
4888  - 0s - loss: 2.4965e-04 - mean_absolute_error: 0.0068 -
     val_loss: 32.1297 - val_mean_absolute_error: 3.6104
4889 epoch_end_callback epoch 7831 lr 1.5625e-05
4890 Epoch 7833/10000
4891  - 0s - loss: 2.8744e-04 - mean_absolute_error: 0.0078 -
     val_loss: 32.1195 - val_mean_absolute_error: 3.6090
4892 epoch_end_callback epoch 7832 lr 1.5625e-05
4893 Epoch 7834/10000
4894  - 0s - loss: 2.8672e-04 - mean_absolute_error: 0.0077 -
     val_loss: 32.1027 - val_mean_absolute_error: 3.6094
4895 epoch_end_callback epoch 7833 lr 1.5625e-05
4896 Epoch 7835/10000
4897  - 0s - loss: 2.8028e-04 - mean_absolute_error: 0.0084 -
     val_loss: 32.1024 - val_mean_absolute_error: 3.6087
4898 epoch_end_callback epoch 7834 lr 1.5625e-05
4899 Epoch 7836/10000
4900  - 0s - loss: 3.0934e-04 - mean_absolute_error: 0.0079 -
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4900 val_loss: 32.1486 - val_mean_absolute_error: 3.6115
4901 epoch_end_callback epoch 7835 lr 1.5625e-05
4902 Epoch 7837/10000
4903  - 0s - loss: 2.8306e-04 - mean_absolute_error: 0.0075 -
     val_loss: 32.1174 - val_mean_absolute_error: 3.6086
4904 epoch_end_callback epoch 7836 lr 1.5625e-05
4905 Epoch 7838/10000
4906  - 0s - loss: 2.5746e-04 - mean_absolute_error: 0.0069 -
     val_loss: 32.1300 - val_mean_absolute_error: 3.6111
4907 epoch_end_callback epoch 7837 lr 1.5625e-05
4908 Epoch 7839/10000
4909  - 0s - loss: 2.9498e-04 - mean_absolute_error: 0.0078 -
     val_loss: 32.1023 - val_mean_absolute_error: 3.6092
4910 epoch_end_callback epoch 7838 lr 1.5625e-05
4911 Epoch 7840/10000
4912  - 0s - loss: 2.7567e-04 - mean_absolute_error: 0.0072 -
     val_loss: 32.1206 - val_mean_absolute_error: 3.6106
4913
4914 Epoch 07840: saving model to ./model/
     model_Epoch7840_val_mean_absolute_error3.611.h5
4915 epoch_end_callback epoch 7839 lr 1.5625e-05
4916 Epoch 7841/10000
4917  - 0s - loss: 2.9166e-04 - mean_absolute_error: 0.0083 -
     val_loss: 32.1051 - val_mean_absolute_error: 3.6092
4918 epoch_end_callback epoch 7840 lr 1.5625e-05
4919 Epoch 7842/10000
4920  - 0s - loss: 2.8428e-04 - mean_absolute_error: 0.0077 -
     val_loss: 32.1263 - val_mean_absolute_error: 3.6101
4921 epoch_end_callback epoch 7841 lr 1.5625e-05
4922 Epoch 7843/10000
4923  - 0s - loss: 3.1064e-04 - mean_absolute_error: 0.0081 -
     val_loss: 32.1221 - val_mean_absolute_error: 3.6108
4924 epoch_end_callback epoch 7842 lr 1.5625e-05
4925 Epoch 7844/10000
4926  - 0s - loss: 2.9333e-04 - mean_absolute_error: 0.0076 -
     val_loss: 32.1232 - val_mean_absolute_error: 3.6107
4927 epoch_end_callback epoch 7843 lr 1.5625e-05
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4928  Epoch 7845/10000
4929   - 0s - loss: 2.8079e-04 - mean_absolute_error: 0.0080 - val_loss: 32.1256 - val_mean_absolute_error: 3.6101
4930  epoch_end_callback epoch 7844 lr 1.5625e-05
4931  Epoch 7846/10000
4932   - 0s - loss: 2.6717e-04 - mean_absolute_error: 0.0077 - val_loss: 32.1194 - val_mean_absolute_error: 3.6106
4933  epoch_end_callback epoch 7845 lr 1.5625e-05
4934  Epoch 7847/10000
4935   - 0s - loss: 2.9528e-04 - mean_absolute_error: 0.0084 - val_loss: 32.1120 - val_mean_absolute_error: 3.6090
4936  epoch_end_callback epoch 7846 lr 1.5625e-05
4937  Epoch 7848/10000
4938   - 0s - loss: 2.6461e-04 - mean_absolute_error: 0.0073 - val_loss: 32.1191 - val_mean_absolute_error: 3.6106
4939  epoch_end_callback epoch 7847 lr 1.5625e-05
4940  Epoch 7849/10000
4941   - 0s - loss: 2.7181e-04 - mean_absolute_error: 0.0080 - val_loss: 32.1356 - val_mean_absolute_error: 3.6102
4942  epoch_end_callback epoch 7848 lr 1.5625e-05
4943  Epoch 7850/10000
4944   - 0s - loss: 2.8775e-04 - mean_absolute_error: 0.0080 - val_loss: 32.1050 - val_mean_absolute_error: 3.6099
4945
4946  Epoch 07850: saving model to ./model/model_Epoch7850_val_mean_absolute_error3.610.h5
4947  epoch_end_callback epoch 7849 lr 1.5625e-05
4948  Epoch 7851/10000
4949   - 0s - loss: 3.0019e-04 - mean_absolute_error: 0.0082 - val_loss: 32.1353 - val_mean_absolute_error: 3.6098
4950  epoch_end_callback epoch 7850 lr 1.5625e-05
4951  Epoch 7852/10000
4952   - 0s - loss: 2.7565e-04 - mean_absolute_error: 0.0076 - val_loss: 32.1287 - val_mean_absolute_error: 3.6096
4953  epoch_end_callback epoch 7851 lr 1.5625e-05
4954  Epoch 7853/10000
4955   - 0s - loss: 2.6977e-04 - mean_absolute_error: 0.0078 -
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4955  val_loss: 32.1168 - val_mean_absolute_error: 3.6122
4956  epoch_end_callback epoch 7852 lr 1.5625e-05
4957  Epoch 7854/10000
4958   - 0s - loss: 2.9006e-04 - mean_absolute_error: 0.0067 -
      val_loss: 32.1031 - val_mean_absolute_error: 3.6093
4959  epoch_end_callback epoch 7853 lr 1.5625e-05
4960  Epoch 7855/10000
4961   - 0s - loss: 2.9198e-04 - mean_absolute_error: 0.0086 -
      val_loss: 32.1185 - val_mean_absolute_error: 3.6097
4962  epoch_end_callback epoch 7854 lr 1.5625e-05
4963  Epoch 7856/10000
4964   - 0s - loss: 2.3720e-04 - mean_absolute_error: 0.0074 -
      val_loss: 32.1110 - val_mean_absolute_error: 3.6094
4965  epoch_end_callback epoch 7855 lr 1.5625e-05
4966  Epoch 7857/10000
4967   - 0s - loss: 3.0450e-04 - mean_absolute_error: 0.0087 -
      val_loss: 32.1223 - val_mean_absolute_error: 3.6107
4968  epoch_end_callback epoch 7856 lr 1.5625e-05
4969  Epoch 7858/10000
4970   - 0s - loss: 2.2887e-04 - mean_absolute_error: 0.0072 -
      val_loss: 32.0903 - val_mean_absolute_error: 3.6107
4971  epoch_end_callback epoch 7857 lr 1.5625e-05
4972  Epoch 7859/10000
4973   - 0s - loss: 3.0265e-04 - mean_absolute_error: 0.0085 -
      val_loss: 32.1001 - val_mean_absolute_error: 3.6095
4974  epoch_end_callback epoch 7858 lr 1.5625e-05
4975  Epoch 7860/10000
4976   - 0s - loss: 2.9222e-04 - mean_absolute_error: 0.0076 -
      val_loss: 32.1165 - val_mean_absolute_error: 3.6099
4977
4978  Epoch 07860: saving model to ./model/
      model_Epoch7860_val_mean_absolute_error3.610.h5
4979  epoch_end_callback epoch 7859 lr 1.5625e-05
4980  Epoch 7861/10000
4981   - 0s - loss: 2.6605e-04 - mean_absolute_error: 0.0073 -
      val_loss: 32.1028 - val_mean_absolute_error: 3.6110
4982  epoch_end_callback epoch 7860 lr 1.5625e-05
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4983  Epoch 7862/10000
4984   - 0s - loss: 2.9474e-04 - mean_absolute_error: 0.0080 -
      val_loss: 32.0594 - val_mean_absolute_error: 3.6094
4985  epoch_end_callback epoch 7861 lr 1.5625e-05
4986  Epoch 7863/10000
4987   - 0s - loss: 2.6127e-04 - mean_absolute_error: 0.0076 -
      val_loss: 32.1091 - val_mean_absolute_error: 3.6086
4988  epoch_end_callback epoch 7862 lr 1.5625e-05
4989  Epoch 7864/10000
4990   - 0s - loss: 2.4760e-04 - mean_absolute_error: 0.0072 -
      val_loss: 32.1167 - val_mean_absolute_error: 3.6104
4991  epoch_end_callback epoch 7863 lr 1.5625e-05
4992  Epoch 7865/10000
4993   - 0s - loss: 2.8051e-04 - mean_absolute_error: 0.0075 -
      val_loss: 32.0966 - val_mean_absolute_error: 3.6085
4994  epoch_end_callback epoch 7864 lr 1.5625e-05
4995  Epoch 7866/10000
4996   - 0s - loss: 3.0116e-04 - mean_absolute_error: 0.0084 -
      val_loss: 32.1074 - val_mean_absolute_error: 3.6084
4997  epoch_end_callback epoch 7865 lr 1.5625e-05
4998  Epoch 7867/10000
4999   - 0s - loss: 2.9025e-04 - mean_absolute_error: 0.0084 -
      val_loss: 32.1164 - val_mean_absolute_error: 3.6103
5000  epoch_end_callback epoch 7866 lr 1.5625e-05
5001  Epoch 7868/10000
5002   - 0s - loss: 2.8957e-04 - mean_absolute_error: 0.0079 -
      val_loss: 32.0921 - val_mean_absolute_error: 3.6099
5003  epoch_end_callback epoch 7867 lr 1.5625e-05
5004  Epoch 7869/10000
5005   - 0s - loss: 2.7508e-04 - mean_absolute_error: 0.0073 -
      val_loss: 32.1060 - val_mean_absolute_error: 3.6104
5006  epoch_end_callback epoch 7868 lr 1.5625e-05
5007  Epoch 7870/10000
5008   - 0s - loss: 2.8464e-04 - mean_absolute_error: 0.0077 -
      val_loss: 32.1257 - val_mean_absolute_error: 3.6119
5009
5010  Epoch 07870: saving model to ./model/
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5010 model_Epoch7870_val_mean_absolute_error3.612.h5
5011 epoch_end_callback epoch 7869 lr 1.5625e-05
5012 Epoch 7871/10000
5013  - 0s - loss: 2.8796e-04 - mean_absolute_error: 0.0083 -
     val_loss: 32.1222 - val_mean_absolute_error: 3.6108
5014 epoch_end_callback epoch 7870 lr 1.5625e-05
5015 Epoch 7872/10000
5016  - 0s - loss: 2.7033e-04 - mean_absolute_error: 0.0070 -
     val_loss: 32.0937 - val_mean_absolute_error: 3.6107
5017 epoch_end_callback epoch 7871 lr 1.5625e-05
5018 Epoch 7873/10000
5019  - 0s - loss: 3.0207e-04 - mean_absolute_error: 0.0081 -
     val_loss: 32.1105 - val_mean_absolute_error: 3.6102
5020 epoch_end_callback epoch 7872 lr 1.5625e-05
5021 Epoch 7874/10000
5022  - 0s - loss: 2.8082e-04 - mean_absolute_error: 0.0082 -
     val_loss: 32.1047 - val_mean_absolute_error: 3.6099
5023 epoch_end_callback epoch 7873 lr 1.5625e-05
5024 Epoch 7875/10000
5025  - 0s - loss: 2.9704e-04 - mean_absolute_error: 0.0082 -
     val_loss: 32.1291 - val_mean_absolute_error: 3.6112
5026 epoch_end_callback epoch 7874 lr 1.5625e-05
5027 Epoch 7876/10000
5028  - 0s - loss: 2.8514e-04 - mean_absolute_error: 0.0075 -
     val_loss: 32.1076 - val_mean_absolute_error: 3.6101
5029 epoch_end_callback epoch 7875 lr 1.5625e-05
5030 Epoch 7877/10000
5031  - 0s - loss: 2.6763e-04 - mean_absolute_error: 0.0072 -
     val_loss: 32.1248 - val_mean_absolute_error: 3.6108
5032 epoch_end_callback epoch 7876 lr 1.5625e-05
5033 Epoch 7878/10000
5034  - 0s - loss: 3.3313e-04 - mean_absolute_error: 0.0083 -
     val_loss: 32.0934 - val_mean_absolute_error: 3.6091
5035 epoch_end_callback epoch 7877 lr 1.5625e-05
5036 Epoch 7879/10000
5037  - 0s - loss: 2.3707e-04 - mean_absolute_error: 0.0066 -
     val_loss: 32.1242 - val_mean_absolute_error: 3.6100
```

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5038  epoch_end_callback epoch 7878 lr 1.5625e-05
5039  Epoch 7880/10000
5040   - 0s - loss: 2.8797e-04 - mean_absolute_error: 0.0085 -
      val_loss: 32.1149 - val_mean_absolute_error: 3.6102
5041
5042  Epoch 07880: saving model to ./model/
      model_Epoch7880_val_mean_absolute_error3.610.h5
5043  epoch_end_callback epoch 7879 lr 1.5625e-05
5044  Epoch 7881/10000
5045   - 0s - loss: 2.6433e-04 - mean_absolute_error: 0.0078 -
      val_loss: 32.1222 - val_mean_absolute_error: 3.6110
5046  epoch_end_callback epoch 7880 lr 1.5625e-05
5047  Epoch 7882/10000
5048   - 0s - loss: 2.6544e-04 - mean_absolute_error: 0.0074 -
      val_loss: 32.1104 - val_mean_absolute_error: 3.6114
5049  epoch_end_callback epoch 7881 lr 1.5625e-05
5050  Epoch 7883/10000
5051   - 0s - loss: 2.9466e-04 - mean_absolute_error: 0.0082 -
      val_loss: 32.1087 - val_mean_absolute_error: 3.6114
5052  epoch_end_callback epoch 7882 lr 1.5625e-05
5053  Epoch 7884/10000
5054   - 0s - loss: 2.7554e-04 - mean_absolute_error: 0.0074 -
      val_loss: 32.1132 - val_mean_absolute_error: 3.6096
5055  epoch_end_callback epoch 7883 lr 1.5625e-05
5056  Epoch 7885/10000
5057   - 0s - loss: 2.7366e-04 - mean_absolute_error: 0.0075 -
      val_loss: 32.1230 - val_mean_absolute_error: 3.6107
5058  epoch_end_callback epoch 7884 lr 1.5625e-05
5059  Epoch 7886/10000
5060   - 0s - loss: 3.0811e-04 - mean_absolute_error: 0.0086 -
      val_loss: 32.1224 - val_mean_absolute_error: 3.6099
5061  epoch_end_callback epoch 7885 lr 1.5625e-05
5062  Epoch 7887/10000
5063   - 0s - loss: 2.7063e-04 - mean_absolute_error: 0.0073 -
      val_loss: 32.1316 - val_mean_absolute_error: 3.6096
5064  epoch_end_callback epoch 7886 lr 1.5625e-05
5065  Epoch 7888/10000
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5066   - 0s - loss: 2.7355e-04 - mean_absolute_error: 0.0073 -
       val_loss: 32.1190 - val_mean_absolute_error: 3.6114
5067   epoch_end_callback epoch 7887 lr 1.5625e-05
5068   Epoch 7889/10000
5069   - 0s - loss: 3.1442e-04 - mean_absolute_error: 0.0082 -
       val_loss: 32.1033 - val_mean_absolute_error: 3.6103
5070   epoch_end_callback epoch 7888 lr 1.5625e-05
5071   Epoch 7890/10000
5072   - 0s - loss: 2.9229e-04 - mean_absolute_error: 0.0084 -
       val_loss: 32.1223 - val_mean_absolute_error: 3.6104
5073
5074   Epoch 07890: saving model to ./model/
       model_Epoch7890_val_mean_absolute_error3.610.h5
5075   epoch_end_callback epoch 7889 lr 1.5625e-05
5076   Epoch 7891/10000
5077   - 0s - loss: 2.9033e-04 - mean_absolute_error: 0.0079 -
       val_loss: 32.1022 - val_mean_absolute_error: 3.6078
5078   epoch_end_callback epoch 7890 lr 1.5625e-05
5079   Epoch 7892/10000
5080   - 0s - loss: 2.6480e-04 - mean_absolute_error: 0.0080 -
       val_loss: 32.1281 - val_mean_absolute_error: 3.6103
5081   epoch_end_callback epoch 7891 lr 1.5625e-05
5082   Epoch 7893/10000
5083   - 0s - loss: 3.2315e-04 - mean_absolute_error: 0.0082 -
       val_loss: 32.1116 - val_mean_absolute_error: 3.6114
5084   epoch_end_callback epoch 7892 lr 1.5625e-05
5085   Epoch 7894/10000
5086   - 0s - loss: 2.6142e-04 - mean_absolute_error: 0.0069 -
       val_loss: 32.0996 - val_mean_absolute_error: 3.6089
5087   epoch_end_callback epoch 7893 lr 1.5625e-05
5088   Epoch 7895/10000
5089   - 0s - loss: 2.9996e-04 - mean_absolute_error: 0.0075 -
       val_loss: 32.1179 - val_mean_absolute_error: 3.6108
5090   epoch_end_callback epoch 7894 lr 1.5625e-05
5091   Epoch 7896/10000
5092   - 0s - loss: 2.7770e-04 - mean_absolute_error: 0.0072 -
       val_loss: 32.1132 - val_mean_absolute_error: 3.6121
```

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5093  epoch_end_callback epoch 7895 lr 1.5625e-05
5094  Epoch 7897/10000
5095    - 0s - loss: 2.7601e-04 - mean_absolute_error: 0.0072 -
      val_loss: 32.1066 - val_mean_absolute_error: 3.6092
5096  epoch_end_callback epoch 7896 lr 1.5625e-05
5097  Epoch 7898/10000
5098    - 0s - loss: 2.3231e-04 - mean_absolute_error: 0.0073 -
      val_loss: 32.1110 - val_mean_absolute_error: 3.6102
5099  epoch_end_callback epoch 7897 lr 1.5625e-05
5100  Epoch 7899/10000
5101    - 0s - loss: 3.4231e-04 - mean_absolute_error: 0.0086 -
      val_loss: 32.1052 - val_mean_absolute_error: 3.6093
5102  epoch_end_callback epoch 7898 lr 1.5625e-05
5103  Epoch 7900/10000
5104    - 0s - loss: 2.6080e-04 - mean_absolute_error: 0.0066 -
      val_loss: 32.1288 - val_mean_absolute_error: 3.6117
5105
5106  Epoch 07900: saving model to ./model/
      model_Epoch7900_val_mean_absolute_error3.612.h5
5107  epoch_end_callback epoch 7899 lr 1.5625e-05
5108  Epoch 7901/10000
5109    - 0s - loss: 2.8037e-04 - mean_absolute_error: 0.0083 -
      val_loss: 32.1497 - val_mean_absolute_error: 3.6107
5110  epoch_end_callback epoch 7900 lr 1.5625e-05
5111  Epoch 7902/10000
5112    - 0s - loss: 3.0553e-04 - mean_absolute_error: 0.0080 -
      val_loss: 32.1574 - val_mean_absolute_error: 3.6113
5113  epoch_end_callback epoch 7901 lr 1.5625e-05
5114  Epoch 7903/10000
5115    - 0s - loss: 2.8982e-04 - mean_absolute_error: 0.0078 -
      val_loss: 32.1088 - val_mean_absolute_error: 3.6091
5116  epoch_end_callback epoch 7902 lr 1.5625e-05
5117  Epoch 7904/10000
5118    - 0s - loss: 2.5839e-04 - mean_absolute_error: 0.0077 -
      val_loss: 32.1153 - val_mean_absolute_error: 3.6105
5119  epoch_end_callback epoch 7903 lr 1.5625e-05
5120  Epoch 7905/10000
```

5121 - 0s - loss: 2.7854e-04 - mean_absolute_error: 0.0076 - val_loss: 32.0946 - val_mean_absolute_error: 3.6097

5122 epoch_end_callback epoch 7904 lr 1.5625e-05

5123 Epoch 7906/10000

5124 - 0s - loss: 2.8486e-04 - mean_absolute_error: 0.0084 - val_loss: 32.1173 - val_mean_absolute_error: 3.6089

5125 epoch_end_callback epoch 7905 lr 1.5625e-05

5126 Epoch 7907/10000

5127 - 0s - loss: 2.9325e-04 - mean_absolute_error: 0.0078 - val_loss: 32.1064 - val_mean_absolute_error: 3.6089

5128 epoch_end_callback epoch 7906 lr 1.5625e-05

5129 Epoch 7908/10000

5130 - 0s - loss: 3.0704e-04 - mean_absolute_error: 0.0083 - val_loss: 32.1175 - val_mean_absolute_error: 3.6104

5131 epoch_end_callback epoch 7907 lr 1.5625e-05

5132 Epoch 7909/10000

5133 - 0s - loss: 2.8588e-04 - mean_absolute_error: 0.0077 - val_loss: 32.1015 - val_mean_absolute_error: 3.6095

5134 epoch_end_callback epoch 7908 lr 1.5625e-05

5135 Epoch 7910/10000

5136 - 0s - loss: 3.0769e-04 - mean_absolute_error: 0.0079 - val_loss: 32.1360 - val_mean_absolute_error: 3.6112

5137

5138 Epoch 07910: saving model to ./model/model_Epoch7910_val_mean_absolute_error3.611.h5

5139 epoch_end_callback epoch 7909 lr 1.5625e-05

5140 Epoch 7911/10000

5141 - 0s - loss: 2.6214e-04 - mean_absolute_error: 0.0071 - val_loss: 32.1073 - val_mean_absolute_error: 3.6097

5142 epoch_end_callback epoch 7910 lr 1.5625e-05

5143 Epoch 7912/10000

5144 - 0s - loss: 2.9150e-04 - mean_absolute_error: 0.0078 - val_loss: 32.1264 - val_mean_absolute_error: 3.6103

5145 epoch_end_callback epoch 7911 lr 1.5625e-05

5146 Epoch 7913/10000

5147 - 0s - loss: 2.5876e-04 - mean_absolute_error: 0.0074 - val_loss: 32.1207 - val_mean_absolute_error: 3.6111

5148 epoch_end_callback epoch 7912 lr 1.5625e-05
5149 Epoch 7914/10000
5150   - 0s - loss: 2.8782e-04 - mean_absolute_error: 0.0084 - val_loss: 32.1067 - val_mean_absolute_error: 3.6106
5151 epoch_end_callback epoch 7913 lr 1.5625e-05
5152 Epoch 7915/10000
5153   - 0s - loss: 2.7516e-04 - mean_absolute_error: 0.0076 - val_loss: 32.1723 - val_mean_absolute_error: 3.6129
5154 epoch_end_callback epoch 7914 lr 1.5625e-05
5155 Epoch 7916/10000
5156   - 0s - loss: 3.2203e-04 - mean_absolute_error: 0.0087 - val_loss: 32.1150 - val_mean_absolute_error: 3.6102
5157 epoch_end_callback epoch 7915 lr 1.5625e-05
5158 Epoch 7917/10000
5159   - 0s - loss: 2.4252e-04 - mean_absolute_error: 0.0064 - val_loss: 32.0949 - val_mean_absolute_error: 3.6086
5160 epoch_end_callback epoch 7916 lr 1.5625e-05
5161 Epoch 7918/10000
5162   - 0s - loss: 2.9658e-04 - mean_absolute_error: 0.0079 - val_loss: 32.1310 - val_mean_absolute_error: 3.6112
5163 epoch_end_callback epoch 7917 lr 1.5625e-05
5164 Epoch 7919/10000
5165   - 0s - loss: 2.4952e-04 - mean_absolute_error: 0.0068 - val_loss: 32.0974 - val_mean_absolute_error: 3.6104
5166 epoch_end_callback epoch 7918 lr 1.5625e-05
5167 Epoch 7920/10000
5168   - 0s - loss: 2.6966e-04 - mean_absolute_error: 0.0073 - val_loss: 32.1087 - val_mean_absolute_error: 3.6106
5169
5170 Epoch 07920: saving model to ./model/ model_Epoch7920_val_mean_absolute_error3.611.h5
5171 epoch_end_callback epoch 7919 lr 1.5625e-05
5172 Epoch 7921/10000
5173   - 0s - loss: 2.8707e-04 - mean_absolute_error: 0.0086 - val_loss: 32.1279 - val_mean_absolute_error: 3.6115
5174 epoch_end_callback epoch 7920 lr 1.5625e-05
5175 Epoch 7922/10000

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5176    - 0s - loss: 2.9578e-04 - mean_absolute_error: 0.0081 -
        val_loss: 32.1204 - val_mean_absolute_error: 3.6111
5177  epoch_end_callback epoch 7921 lr 1.5625e-05
5178  Epoch 7923/10000
5179    - 0s - loss: 2.4921e-04 - mean_absolute_error: 0.0068 -
        val_loss: 32.1287 - val_mean_absolute_error: 3.6116
5180  epoch_end_callback epoch 7922 lr 1.5625e-05
5181  Epoch 7924/10000
5182    - 0s - loss: 2.7756e-04 - mean_absolute_error: 0.0080 -
        val_loss: 32.1067 - val_mean_absolute_error: 3.6096
5183  epoch_end_callback epoch 7923 lr 1.5625e-05
5184  Epoch 7925/10000
5185    - 0s - loss: 2.8429e-04 - mean_absolute_error: 0.0076 -
        val_loss: 32.1181 - val_mean_absolute_error: 3.6109
5186  epoch_end_callback epoch 7924 lr 1.5625e-05
5187  Epoch 7926/10000
5188    - 0s - loss: 2.7338e-04 - mean_absolute_error: 0.0073 -
        val_loss: 32.1686 - val_mean_absolute_error: 3.6118
5189  epoch_end_callback epoch 7925 lr 1.5625e-05
5190  Epoch 7927/10000
5191    - 0s - loss: 2.6990e-04 - mean_absolute_error: 0.0081 -
        val_loss: 32.1203 - val_mean_absolute_error: 3.6121
5192  epoch_end_callback epoch 7926 lr 1.5625e-05
5193  Epoch 7928/10000
5194    - 0s - loss: 2.7166e-04 - mean_absolute_error: 0.0076 -
        val_loss: 32.1072 - val_mean_absolute_error: 3.6090
5195  epoch_end_callback epoch 7927 lr 1.5625e-05
5196  Epoch 7929/10000
5197    - 0s - loss: 2.9859e-04 - mean_absolute_error: 0.0088 -
        val_loss: 32.1119 - val_mean_absolute_error: 3.6092
5198  epoch_end_callback epoch 7928 lr 1.5625e-05
5199  Epoch 7930/10000
5200    - 0s - loss: 2.6128e-04 - mean_absolute_error: 0.0074 -
        val_loss: 32.1252 - val_mean_absolute_error: 3.6111
5201
5202  Epoch 07930: saving model to ./model/
      model_Epoch7930_val_mean_absolute_error3.611.h5
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5203  epoch_end_callback epoch 7929 lr 1.5625e-05
5204  Epoch 7931/10000
5205   - 0s - loss: 3.1539e-04 - mean_absolute_error: 0.0078 -
      val_loss: 32.0947 - val_mean_absolute_error: 3.6097
5206  epoch_end_callback epoch 7930 lr 1.5625e-05
5207  Epoch 7932/10000
5208   - 0s - loss: 2.6056e-04 - mean_absolute_error: 0.0067 -
      val_loss: 32.1129 - val_mean_absolute_error: 3.6106
5209  epoch_end_callback epoch 7931 lr 1.5625e-05
5210  Epoch 7933/10000
5211   - 0s - loss: 2.7052e-04 - mean_absolute_error: 0.0076 -
      val_loss: 32.1177 - val_mean_absolute_error: 3.6110
5212  epoch_end_callback epoch 7932 lr 1.5625e-05
5213  Epoch 7934/10000
5214   - 0s - loss: 2.8069e-04 - mean_absolute_error: 0.0082 -
      val_loss: 32.1354 - val_mean_absolute_error: 3.6109
5215  epoch_end_callback epoch 7933 lr 1.5625e-05
5216  Epoch 7935/10000
5217   - 0s - loss: 2.5839e-04 - mean_absolute_error: 0.0075 -
      val_loss: 32.1194 - val_mean_absolute_error: 3.6109
5218  epoch_end_callback epoch 7934 lr 1.5625e-05
5219  Epoch 7936/10000
5220   - 0s - loss: 2.8543e-04 - mean_absolute_error: 0.0075 -
      val_loss: 32.1051 - val_mean_absolute_error: 3.6108
5221  epoch_end_callback epoch 7935 lr 1.5625e-05
5222  Epoch 7937/10000
5223   - 0s - loss: 2.9254e-04 - mean_absolute_error: 0.0086 -
      val_loss: 32.1080 - val_mean_absolute_error: 3.6096
5224  epoch_end_callback epoch 7936 lr 1.5625e-05
5225  Epoch 7938/10000
5226   - 0s - loss: 2.6824e-04 - mean_absolute_error: 0.0077 -
      val_loss: 32.0919 - val_mean_absolute_error: 3.6097
5227  epoch_end_callback epoch 7937 lr 1.5625e-05
5228  Epoch 7939/10000
5229   - 0s - loss: 2.8590e-04 - mean_absolute_error: 0.0082 -
      val_loss: 32.1340 - val_mean_absolute_error: 3.6104
5230  epoch_end_callback epoch 7938 lr 1.5625e-05
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5231 Epoch 7940/10000
5232  - 0s - loss: 2.5657e-04 - mean_absolute_error: 0.0074 -
     val_loss: 32.1416 - val_mean_absolute_error: 3.6109
5233
5234 Epoch 07940: saving model to ./model/
     model_Epoch7940_val_mean_absolute_error3.611.h5
5235 epoch_end_callback epoch 7939 lr 1.5625e-05
5236 Epoch 7941/10000
5237  - 0s - loss: 2.9831e-04 - mean_absolute_error: 0.0079 -
     val_loss: 32.1183 - val_mean_absolute_error: 3.6091
5238 epoch_end_callback epoch 7940 lr 1.5625e-05
5239 Epoch 7942/10000
5240  - 0s - loss: 2.3168e-04 - mean_absolute_error: 0.0075 -
     val_loss: 32.1125 - val_mean_absolute_error: 3.6100
5241 epoch_end_callback epoch 7941 lr 1.5625e-05
5242 Epoch 7943/10000
5243  - 0s - loss: 2.9822e-04 - mean_absolute_error: 0.0093 -
     val_loss: 32.1048 - val_mean_absolute_error: 3.6096
5244 epoch_end_callback epoch 7942 lr 1.5625e-05
5245 Epoch 7944/10000
5246  - 0s - loss: 2.9607e-04 - mean_absolute_error: 0.0085 -
     val_loss: 32.1063 - val_mean_absolute_error: 3.6102
5247 epoch_end_callback epoch 7943 lr 1.5625e-05
5248 Epoch 7945/10000
5249  - 0s - loss: 2.7961e-04 - mean_absolute_error: 0.0068 -
     val_loss: 32.1231 - val_mean_absolute_error: 3.6103
5250 epoch_end_callback epoch 7944 lr 1.5625e-05
5251 Epoch 7946/10000
5252  - 0s - loss: 2.8340e-04 - mean_absolute_error: 0.0084 -
     val_loss: 32.1249 - val_mean_absolute_error: 3.6122
5253 epoch_end_callback epoch 7945 lr 1.5625e-05
5254 Epoch 7947/10000
5255  - 0s - loss: 2.9883e-04 - mean_absolute_error: 0.0080 -
     val_loss: 32.0998 - val_mean_absolute_error: 3.6098
5256 epoch_end_callback epoch 7946 lr 1.5625e-05
5257 Epoch 7948/10000
5258  - 0s - loss: 2.6798e-04 - mean_absolute_error: 0.0071 -
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5258  val_loss: 32.1057 - val_mean_absolute_error: 3.6100
5259  epoch_end_callback epoch 7947 lr 1.5625e-05
5260  Epoch 7949/10000
5261   - 0s - loss: 2.8211e-04 - mean_absolute_error: 0.0081 -
      val_loss: 32.1312 - val_mean_absolute_error: 3.6115
5262  epoch_end_callback epoch 7948 lr 1.5625e-05
5263  Epoch 7950/10000
5264   - 0s - loss: 2.9727e-04 - mean_absolute_error: 0.0076 -
      val_loss: 32.1342 - val_mean_absolute_error: 3.6102
5265
5266  Epoch 07950: saving model to ./model/
      model_Epoch7950_val_mean_absolute_error3.610.h5
5267  epoch_end_callback epoch 7949 lr 1.5625e-05
5268  Epoch 7951/10000
5269   - 0s - loss: 2.6837e-04 - mean_absolute_error: 0.0076 -
      val_loss: 32.1080 - val_mean_absolute_error: 3.6096
5270  epoch_end_callback epoch 7950 lr 1.5625e-05
5271  Epoch 7952/10000
5272   - 0s - loss: 2.9908e-04 - mean_absolute_error: 0.0082 -
      val_loss: 32.1080 - val_mean_absolute_error: 3.6095
5273  epoch_end_callback epoch 7951 lr 1.5625e-05
5274  Epoch 7953/10000
5275   - 0s - loss: 2.0788e-04 - mean_absolute_error: 0.0065 -
      val_loss: 32.0874 - val_mean_absolute_error: 3.6105
5276  epoch_end_callback epoch 7952 lr 1.5625e-05
5277  Epoch 7954/10000
5278   - 0s - loss: 2.9462e-04 - mean_absolute_error: 0.0076 -
      val_loss: 32.1171 - val_mean_absolute_error: 3.6115
5279  epoch_end_callback epoch 7953 lr 1.5625e-05
5280  Epoch 7955/10000
5281   - 0s - loss: 2.8945e-04 - mean_absolute_error: 0.0077 -
      val_loss: 32.1246 - val_mean_absolute_error: 3.6120
5282  epoch_end_callback epoch 7954 lr 1.5625e-05
5283  Epoch 7956/10000
5284   - 0s - loss: 2.5085e-04 - mean_absolute_error: 0.0072 -
      val_loss: 32.1151 - val_mean_absolute_error: 3.6109
5285  epoch_end_callback epoch 7955 lr 1.5625e-05
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5286  Epoch 7957/10000
5287   - 0s - loss: 2.1896e-04 - mean_absolute_error: 0.0068 -
       val_loss: 32.1275 - val_mean_absolute_error: 3.6108
5288  epoch_end_callback epoch 7956 lr 1.5625e-05
5289  Epoch 7958/10000
5290   - 0s - loss: 3.1949e-04 - mean_absolute_error: 0.0086 -
       val_loss: 32.1218 - val_mean_absolute_error: 3.6113
5291  epoch_end_callback epoch 7957 lr 1.5625e-05
5292  Epoch 7959/10000
5293   - 0s - loss: 2.2532e-04 - mean_absolute_error: 0.0068 -
       val_loss: 32.1189 - val_mean_absolute_error: 3.6134
5294  epoch_end_callback epoch 7958 lr 1.5625e-05
5295  Epoch 7960/10000
5296   - 0s - loss: 3.0402e-04 - mean_absolute_error: 0.0078 -
       val_loss: 32.1190 - val_mean_absolute_error: 3.6105
5297
5298  Epoch 07960: saving model to ./model/
       model_Epoch7960_val_mean_absolute_error3.611.h5
5299  epoch_end_callback epoch 7959 lr 1.5625e-05
5300  Epoch 7961/10000
5301   - 0s - loss: 2.6619e-04 - mean_absolute_error: 0.0074 -
       val_loss: 32.1215 - val_mean_absolute_error: 3.6095
5302  epoch_end_callback epoch 7960 lr 1.5625e-05
5303  Epoch 7962/10000
5304   - 0s - loss: 2.6004e-04 - mean_absolute_error: 0.0075 -
       val_loss: 32.1042 - val_mean_absolute_error: 3.6100
5305  epoch_end_callback epoch 7961 lr 1.5625e-05
5306  Epoch 7963/10000
5307   - 0s - loss: 2.7112e-04 - mean_absolute_error: 0.0074 -
       val_loss: 32.0961 - val_mean_absolute_error: 3.6095
5308  epoch_end_callback epoch 7962 lr 1.5625e-05
5309  Epoch 7964/10000
5310   - 0s - loss: 2.7343e-04 - mean_absolute_error: 0.0075 -
       val_loss: 32.1210 - val_mean_absolute_error: 3.6113
5311  epoch_end_callback epoch 7963 lr 1.5625e-05
5312  Epoch 7965/10000
5313   - 0s - loss: 2.6596e-04 - mean_absolute_error: 0.0074 -
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5313  val_loss: 32.1013 - val_mean_absolute_error: 3.6096
5314  epoch_end_callback epoch 7964 lr 1.5625e-05
5315  Epoch 7966/10000
5316   - 0s - loss: 2.7334e-04 - mean_absolute_error: 0.0081 -
      val_loss: 32.1043 - val_mean_absolute_error: 3.6096
5317  epoch_end_callback epoch 7965 lr 1.5625e-05
5318  Epoch 7967/10000
5319   - 0s - loss: 3.1491e-04 - mean_absolute_error: 0.0076 -
      val_loss: 32.1118 - val_mean_absolute_error: 3.6109
5320  epoch_end_callback epoch 7966 lr 1.5625e-05
5321  Epoch 7968/10000
5322   - 0s - loss: 2.8720e-04 - mean_absolute_error: 0.0080 -
      val_loss: 32.1199 - val_mean_absolute_error: 3.6095
5323  epoch_end_callback epoch 7967 lr 1.5625e-05
5324  Epoch 7969/10000
5325   - 0s - loss: 2.6565e-04 - mean_absolute_error: 0.0069 -
      val_loss: 32.1035 - val_mean_absolute_error: 3.6086
5326  epoch_end_callback epoch 7968 lr 1.5625e-05
5327  Epoch 7970/10000
5328   - 0s - loss: 2.6471e-04 - mean_absolute_error: 0.0071 -
      val_loss: 32.1388 - val_mean_absolute_error: 3.6115
5329
5330  Epoch 07970: saving model to ./model/
      model_Epoch7970_val_mean_absolute_error3.611.h5
5331  epoch_end_callback epoch 7969 lr 1.5625e-05
5332  Epoch 7971/10000
5333   - 0s - loss: 2.2350e-04 - mean_absolute_error: 0.0073 -
      val_loss: 32.1105 - val_mean_absolute_error: 3.6100
5334  epoch_end_callback epoch 7970 lr 1.5625e-05
5335  Epoch 7972/10000
5336   - 0s - loss: 2.9623e-04 - mean_absolute_error: 0.0093 -
      val_loss: 32.1088 - val_mean_absolute_error: 3.6110
5337  epoch_end_callback epoch 7971 lr 1.5625e-05
5338  Epoch 7973/10000
5339   - 0s - loss: 2.4253e-04 - mean_absolute_error: 0.0065 -
      val_loss: 32.1277 - val_mean_absolute_error: 3.6097
5340  epoch_end_callback epoch 7972 lr 1.5625e-05
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5341  Epoch 7974/10000
5342   - 0s - loss: 2.9722e-04 - mean_absolute_error: 0.0081 -
       val_loss: 32.1171 - val_mean_absolute_error: 3.6112
5343  epoch_end_callback epoch 7973 lr 1.5625e-05
5344  Epoch 7975/10000
5345   - 0s - loss: 2.6142e-04 - mean_absolute_error: 0.0064 -
       val_loss: 32.1383 - val_mean_absolute_error: 3.6103
5346  epoch_end_callback epoch 7974 lr 1.5625e-05
5347  Epoch 7976/10000
5348   - 0s - loss: 3.2314e-04 - mean_absolute_error: 0.0078 -
       val_loss: 32.0983 - val_mean_absolute_error: 3.6082
5349  epoch_end_callback epoch 7975 lr 1.5625e-05
5350  Epoch 7977/10000
5351   - 0s - loss: 2.6638e-04 - mean_absolute_error: 0.0073 -
       val_loss: 32.1109 - val_mean_absolute_error: 3.6121
5352  epoch_end_callback epoch 7976 lr 1.5625e-05
5353  Epoch 7978/10000
5354   - 0s - loss: 2.6175e-04 - mean_absolute_error: 0.0074 -
       val_loss: 32.1437 - val_mean_absolute_error: 3.6129
5355  epoch_end_callback epoch 7977 lr 1.5625e-05
5356  Epoch 7979/10000
5357   - 0s - loss: 2.7401e-04 - mean_absolute_error: 0.0070 -
       val_loss: 32.1084 - val_mean_absolute_error: 3.6090
5358  epoch_end_callback epoch 7978 lr 1.5625e-05
5359  Epoch 7980/10000
5360   - 0s - loss: 2.7162e-04 - mean_absolute_error: 0.0077 -
       val_loss: 32.0957 - val_mean_absolute_error: 3.6099
5361
5362  Epoch 07980: saving model to ./model/
       model_Epoch7980_val_mean_absolute_error3.610.h5
5363  epoch_end_callback epoch 7979 lr 1.5625e-05
5364  Epoch 7981/10000
5365   - 0s - loss: 2.6127e-04 - mean_absolute_error: 0.0080 -
       val_loss: 32.0840 - val_mean_absolute_error: 3.6091
5366  epoch_end_callback epoch 7980 lr 1.5625e-05
5367  Epoch 7982/10000
5368   - 0s - loss: 2.5117e-04 - mean_absolute_error: 0.0074 -
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5368 val_loss: 32.1085 - val_mean_absolute_error: 3.6103
5369 epoch_end_callback epoch 7981 lr 1.5625e-05
5370 Epoch 7983/10000
5371  - 0s - loss: 2.7561e-04 - mean_absolute_error: 0.0075 -
     val_loss: 32.0992 - val_mean_absolute_error: 3.6105
5372 epoch_end_callback epoch 7982 lr 1.5625e-05
5373 Epoch 7984/10000
5374  - 0s - loss: 2.7958e-04 - mean_absolute_error: 0.0079 -
     val_loss: 32.1197 - val_mean_absolute_error: 3.6104
5375 epoch_end_callback epoch 7983 lr 1.5625e-05
5376 Epoch 7985/10000
5377  - 0s - loss: 2.7957e-04 - mean_absolute_error: 0.0084 -
     val_loss: 32.1133 - val_mean_absolute_error: 3.6099
5378 epoch_end_callback epoch 7984 lr 1.5625e-05
5379 Epoch 7986/10000
5380  - 0s - loss: 2.7984e-04 - mean_absolute_error: 0.0073 -
     val_loss: 32.1022 - val_mean_absolute_error: 3.6100
5381 epoch_end_callback epoch 7985 lr 1.5625e-05
5382 Epoch 7987/10000
5383  - 0s - loss: 2.7621e-04 - mean_absolute_error: 0.0079 -
     val_loss: 32.1258 - val_mean_absolute_error: 3.6117
5384 epoch_end_callback epoch 7986 lr 1.5625e-05
5385 Epoch 7988/10000
5386  - 0s - loss: 2.0895e-04 - mean_absolute_error: 0.0065 -
     val_loss: 32.1245 - val_mean_absolute_error: 3.6128
5387 epoch_end_callback epoch 7987 lr 1.5625e-05
5388 Epoch 7989/10000
5389  - 0s - loss: 2.9044e-04 - mean_absolute_error: 0.0088 -
     val_loss: 32.1267 - val_mean_absolute_error: 3.6101
5390 epoch_end_callback epoch 7988 lr 1.5625e-05
5391 Epoch 7990/10000
5392  - 0s - loss: 2.8862e-04 - mean_absolute_error: 0.0078 -
     val_loss: 32.1183 - val_mean_absolute_error: 3.6103
5393
5394 Epoch 07990: saving model to ./model/
     model_Epoch7990_val_mean_absolute_error3.610.h5
5395 epoch_end_callback epoch 7989 lr 1.5625e-05
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5396  Epoch 7991/10000
5397   - 0s - loss: 2.7226e-04 - mean_absolute_error: 0.0080 -
       val_loss: 32.1013 - val_mean_absolute_error: 3.6105
5398  epoch_end_callback epoch 7990 lr 1.5625e-05
5399  Epoch 7992/10000
5400   - 0s - loss: 2.7959e-04 - mean_absolute_error: 0.0079 -
       val_loss: 32.1384 - val_mean_absolute_error: 3.6118
5401  epoch_end_callback epoch 7991 lr 1.5625e-05
5402  Epoch 7993/10000
5403   - 0s - loss: 2.9604e-04 - mean_absolute_error: 0.0083 -
       val_loss: 32.1247 - val_mean_absolute_error: 3.6117
5404  epoch_end_callback epoch 7992 lr 1.5625e-05
5405  Epoch 7994/10000
5406   - 0s - loss: 2.5871e-04 - mean_absolute_error: 0.0074 -
       val_loss: 32.1078 - val_mean_absolute_error: 3.6098
5407  epoch_end_callback epoch 7993 lr 1.5625e-05
5408  Epoch 7995/10000
5409   - 0s - loss: 2.2535e-04 - mean_absolute_error: 0.0068 -
       val_loss: 32.1152 - val_mean_absolute_error: 3.6108
5410  epoch_end_callback epoch 7994 lr 1.5625e-05
5411  Epoch 7996/10000
5412   - 0s - loss: 2.9645e-04 - mean_absolute_error: 0.0084 -
       val_loss: 32.1021 - val_mean_absolute_error: 3.6103
5413  epoch_end_callback epoch 7995 lr 1.5625e-05
5414  Epoch 7997/10000
5415   - 0s - loss: 2.6431e-04 - mean_absolute_error: 0.0076 -
       val_loss: 32.1175 - val_mean_absolute_error: 3.6107
5416  epoch_end_callback epoch 7996 lr 1.5625e-05
5417  Epoch 7998/10000
5418   - 0s - loss: 2.7377e-04 - mean_absolute_error: 0.0072 -
       val_loss: 32.1208 - val_mean_absolute_error: 3.6101
5419  epoch_end_callback epoch 7997 lr 1.5625e-05
5420  Epoch 7999/10000
5421   - 0s - loss: 2.9287e-04 - mean_absolute_error: 0.0081 -
       val_loss: 32.1374 - val_mean_absolute_error: 3.6114
5422  epoch_end_callback epoch 7998 lr 1.5625e-05
5423  Epoch 8000/10000
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5424    - 0s - loss: 2.4968e-04 - mean_absolute_error: 0.0072 -
        val_loss: 32.1429 - val_mean_absolute_error: 3.6114

5425

5426    Epoch 08000: saving model to ./model/
        model_Epoch8000_val_mean_absolute_error3.611.h5

5427    epoch_end_callback epoch 7999 lr 1.5625e-05

5428    Epoch 8001/10000

5429     - 0s - loss: 3.1560e-04 - mean_absolute_error: 0.0088 -
        val_loss: 32.1363 - val_mean_absolute_error: 3.6113

5430    epoch_end_callback epoch 8000 lr 1.5625e-05

5431    Epoch 8002/10000

5432     - 0s - loss: 2.5965e-04 - mean_absolute_error: 0.0072 -
        val_loss: 32.1206 - val_mean_absolute_error: 3.6113

5433    epoch_end_callback epoch 8001 lr 1.5625e-05

5434    Epoch 8003/10000

5435     - 0s - loss: 2.5846e-04 - mean_absolute_error: 0.0076 -
        val_loss: 32.1277 - val_mean_absolute_error: 3.6112

5436    epoch_end_callback epoch 8002 lr 1.5625e-05

5437    Epoch 8004/10000

5438     - 0s - loss: 2.8436e-04 - mean_absolute_error: 0.0077 -
        val_loss: 32.1052 - val_mean_absolute_error: 3.6111

5439    epoch_end_callback epoch 8003 lr 1.5625e-05

5440    Epoch 8005/10000

5441     - 0s - loss: 2.7437e-04 - mean_absolute_error: 0.0076 -
        val_loss: 32.1157 - val_mean_absolute_error: 3.6112

5442    epoch_end_callback epoch 8004 lr 1.5625e-05

5443    Epoch 8006/10000

5444     - 0s - loss: 2.8961e-04 - mean_absolute_error: 0.0082 -
        val_loss: 32.0991 - val_mean_absolute_error: 3.6107

5445    epoch_end_callback epoch 8005 lr 1.5625e-05

5446    Epoch 8007/10000

5447     - 0s - loss: 2.5712e-04 - mean_absolute_error: 0.0076 -
        val_loss: 32.1346 - val_mean_absolute_error: 3.6113

5448    epoch_end_callback epoch 8006 lr 1.5625e-05

5449    Epoch 8008/10000

5450     - 0s - loss: 2.8494e-04 - mean_absolute_error: 0.0082 -
        val_loss: 32.1211 - val_mean_absolute_error: 3.6082
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5451  epoch_end_callback epoch 8007 lr 1.5625e-05
5452  Epoch 8009/10000
5453   - 0s - loss: 2.8066e-04 - mean_absolute_error: 0.0076 -
      val_loss: 32.1253 - val_mean_absolute_error: 3.6114
5454  epoch_end_callback epoch 8008 lr 1.5625e-05
5455  Epoch 8010/10000
5456   - 0s - loss: 2.7561e-04 - mean_absolute_error: 0.0077 -
      val_loss: 32.1436 - val_mean_absolute_error: 3.6123
5457
5458  Epoch 08010: saving model to ./model/
      model_Epoch8010_val_mean_absolute_error3.612.h5
5459  epoch_end_callback epoch 8009 lr 1.5625e-05
5460  Epoch 8011/10000
5461   - 0s - loss: 2.6665e-04 - mean_absolute_error: 0.0075 -
      val_loss: 32.1037 - val_mean_absolute_error: 3.6098
5462  epoch_end_callback epoch 8010 lr 1.5625e-05
5463  Epoch 8012/10000
5464   - 0s - loss: 2.7215e-04 - mean_absolute_error: 0.0079 -
      val_loss: 32.1078 - val_mean_absolute_error: 3.6127
5465  epoch_end_callback epoch 8011 lr 1.5625e-05
5466  Epoch 8013/10000
5467   - 0s - loss: 2.7467e-04 - mean_absolute_error: 0.0078 -
      val_loss: 32.1260 - val_mean_absolute_error: 3.6120
5468  epoch_end_callback epoch 8012 lr 1.5625e-05
5469  Epoch 8014/10000
5470   - 0s - loss: 2.3582e-04 - mean_absolute_error: 0.0081 -
      val_loss: 32.1269 - val_mean_absolute_error: 3.6109
5471  epoch_end_callback epoch 8013 lr 1.5625e-05
5472  Epoch 8015/10000
5473   - 0s - loss: 3.2458e-04 - mean_absolute_error: 0.0076 -
      val_loss: 32.1093 - val_mean_absolute_error: 3.6110
5474  epoch_end_callback epoch 8014 lr 1.5625e-05
5475  Epoch 8016/10000
5476   - 0s - loss: 2.4192e-04 - mean_absolute_error: 0.0073 -
      val_loss: 32.1370 - val_mean_absolute_error: 3.6118
5477  epoch_end_callback epoch 8015 lr 1.5625e-05
5478  Epoch 8017/10000
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5479    - 0s - loss: 2.5655e-04 - mean_absolute_error: 0.0073 -
        val_loss: 32.1467 - val_mean_absolute_error: 3.6131
5480   epoch_end_callback epoch 8016 lr 1.5625e-05
5481   Epoch 8018/10000
5482    - 0s - loss: 2.9478e-04 - mean_absolute_error: 0.0081 -
        val_loss: 32.1331 - val_mean_absolute_error: 3.6122
5483   epoch_end_callback epoch 8017 lr 1.5625e-05
5484   Epoch 8019/10000
5485    - 0s - loss: 2.6975e-04 - mean_absolute_error: 0.0073 -
        val_loss: 32.1023 - val_mean_absolute_error: 3.6100
5486   epoch_end_callback epoch 8018 lr 1.5625e-05
5487   Epoch 8020/10000
5488    - 0s - loss: 2.9227e-04 - mean_absolute_error: 0.0074 -
        val_loss: 32.0952 - val_mean_absolute_error: 3.6090
5489
5490   Epoch 08020: saving model to ./model/
        model_Epoch8020_val_mean_absolute_error3.609.h5
5491   epoch_end_callback epoch 8019 lr 1.5625e-05
5492   Epoch 8021/10000
5493    - 0s - loss: 2.6205e-04 - mean_absolute_error: 0.0081 -
        val_loss: 32.1263 - val_mean_absolute_error: 3.6111
5494   epoch_end_callback epoch 8020 lr 1.5625e-05
5495   Epoch 8022/10000
5496    - 0s - loss: 2.6435e-04 - mean_absolute_error: 0.0079 -
        val_loss: 32.1694 - val_mean_absolute_error: 3.6141
5497   epoch_end_callback epoch 8021 lr 1.5625e-05
5498   Epoch 8023/10000
5499    - 0s - loss: 2.7130e-04 - mean_absolute_error: 0.0076 -
        val_loss: 32.1193 - val_mean_absolute_error: 3.6102
5500   epoch_end_callback epoch 8022 lr 1.5625e-05
5501   Epoch 8024/10000
5502    - 0s - loss: 2.9490e-04 - mean_absolute_error: 0.0076 -
        val_loss: 32.1261 - val_mean_absolute_error: 3.6121
5503   epoch_end_callback epoch 8023 lr 1.5625e-05
5504   Epoch 8025/10000
5505    - 0s - loss: 3.0286e-04 - mean_absolute_error: 0.0083 -
        val_loss: 32.1100 - val_mean_absolute_error: 3.6102
```

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5506 epoch_end_callback epoch 8024 lr 1.5625e-05
5507 Epoch 8026/10000
5508  - 0s - loss: 2.6874e-04 - mean_absolute_error: 0.0073 -
     val_loss: 32.1191 - val_mean_absolute_error: 3.6118
5509 epoch_end_callback epoch 8025 lr 1.5625e-05
5510 Epoch 8027/10000
5511  - 0s - loss: 2.4918e-04 - mean_absolute_error: 0.0074 -
     val_loss: 32.1180 - val_mean_absolute_error: 3.6108
5512 epoch_end_callback epoch 8026 lr 1.5625e-05
5513 Epoch 8028/10000
5514  - 0s - loss: 2.6172e-04 - mean_absolute_error: 0.0072 -
     val_loss: 32.1303 - val_mean_absolute_error: 3.6109
5515 epoch_end_callback epoch 8027 lr 1.5625e-05
5516 Epoch 8029/10000
5517  - 0s - loss: 2.4953e-04 - mean_absolute_error: 0.0076 -
     val_loss: 32.1215 - val_mean_absolute_error: 3.6116
5518 epoch_end_callback epoch 8028 lr 1.5625e-05
5519 Epoch 8030/10000
5520  - 0s - loss: 2.6288e-04 - mean_absolute_error: 0.0072 -
     val_loss: 32.1543 - val_mean_absolute_error: 3.6144
5521
5522 Epoch 08030: saving model to ./model/
     model_Epoch8030_val_mean_absolute_error3.614.h5
5523 epoch_end_callback epoch 8029 lr 1.5625e-05
5524 Epoch 8031/10000
5525  - 0s - loss: 2.7882e-04 - mean_absolute_error: 0.0074 -
     val_loss: 32.1179 - val_mean_absolute_error: 3.6119
5526 epoch_end_callback epoch 8030 lr 1.5625e-05
5527 Epoch 8032/10000
5528  - 0s - loss: 2.8789e-04 - mean_absolute_error: 0.0081 -
     val_loss: 32.1110 - val_mean_absolute_error: 3.6109
5529 epoch_end_callback epoch 8031 lr 1.5625e-05
5530 Epoch 8033/10000
5531  - 0s - loss: 2.6084e-04 - mean_absolute_error: 0.0069 -
     val_loss: 32.1305 - val_mean_absolute_error: 3.6121
5532 epoch_end_callback epoch 8032 lr 1.5625e-05
5533 Epoch 8034/10000
```

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5534    - 0s - loss: 2.7254e-04 - mean_absolute_error: 0.0077 -
        val_loss: 32.1094 - val_mean_absolute_error: 3.6120
5535  epoch_end_callback epoch 8033 lr 1.5625e-05
5536  Epoch 8035/10000
5537    - 0s - loss: 3.0432e-04 - mean_absolute_error: 0.0088 -
        val_loss: 32.1183 - val_mean_absolute_error: 3.6128
5538  epoch_end_callback epoch 8034 lr 1.5625e-05
5539  Epoch 8036/10000
5540    - 0s - loss: 2.6255e-04 - mean_absolute_error: 0.0072 -
        val_loss: 32.1261 - val_mean_absolute_error: 3.6118
5541  epoch_end_callback epoch 8035 lr 1.5625e-05
5542  Epoch 8037/10000
5543    - 0s - loss: 2.6804e-04 - mean_absolute_error: 0.0080 -
        val_loss: 32.1593 - val_mean_absolute_error: 3.6125
5544  epoch_end_callback epoch 8036 lr 1.5625e-05
5545  Epoch 8038/10000
5546    - 0s - loss: 2.7136e-04 - mean_absolute_error: 0.0080 -
        val_loss: 32.0863 - val_mean_absolute_error: 3.6105
5547  epoch_end_callback epoch 8037 lr 1.5625e-05
5548  Epoch 8039/10000
5549    - 0s - loss: 2.9653e-04 - mean_absolute_error: 0.0079 -
        val_loss: 32.1160 - val_mean_absolute_error: 3.6102
5550  epoch_end_callback epoch 8038 lr 1.5625e-05
5551  Epoch 8040/10000
5552    - 0s - loss: 2.4665e-04 - mean_absolute_error: 0.0071 -
        val_loss: 32.1275 - val_mean_absolute_error: 3.6110
5553
5554  Epoch 08040: saving model to ./model/
        model_Epoch8040_val_mean_absolute_error3.611.h5
5555  epoch_end_callback epoch 8039 lr 1.5625e-05
5556  Epoch 8041/10000
5557    - 0s - loss: 2.8443e-04 - mean_absolute_error: 0.0077 -
        val_loss: 32.0845 - val_mean_absolute_error: 3.6099
5558  epoch_end_callback epoch 8040 lr 1.5625e-05
5559  Epoch 8042/10000
5560    - 0s - loss: 2.8290e-04 - mean_absolute_error: 0.0085 -
        val_loss: 32.1545 - val_mean_absolute_error: 3.6125
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5561  epoch_end_callback epoch 8041 lr 1.5625e-05
5562  Epoch 8043/10000
5563   - 0s - loss: 3.0390e-04 - mean_absolute_error: 0.0087 -
      val_loss: 32.1197 - val_mean_absolute_error: 3.6110
5564  epoch_end_callback epoch 8042 lr 1.5625e-05
5565  Epoch 8044/10000
5566   - 0s - loss: 2.8005e-04 - mean_absolute_error: 0.0077 -
      val_loss: 32.1443 - val_mean_absolute_error: 3.6111
5567  epoch_end_callback epoch 8043 lr 1.5625e-05
5568  Epoch 8045/10000
5569   - 0s - loss: 2.2685e-04 - mean_absolute_error: 0.0065 -
      val_loss: 32.1745 - val_mean_absolute_error: 3.6137
5570  epoch_end_callback epoch 8044 lr 1.5625e-05
5571  Epoch 8046/10000
5572   - 0s - loss: 2.8146e-04 - mean_absolute_error: 0.0075 -
      val_loss: 32.1329 - val_mean_absolute_error: 3.6111
5573  epoch_end_callback epoch 8045 lr 1.5625e-05
5574  Epoch 8047/10000
5575   - 0s - loss: 2.7057e-04 - mean_absolute_error: 0.0074 -
      val_loss: 32.1343 - val_mean_absolute_error: 3.6119
5576  epoch_end_callback epoch 8046 lr 1.5625e-05
5577  Epoch 8048/10000
5578   - 0s - loss: 3.3547e-04 - mean_absolute_error: 0.0081 -
      val_loss: 32.1334 - val_mean_absolute_error: 3.6117
5579  epoch_end_callback epoch 8047 lr 1.5625e-05
5580  Epoch 8049/10000
5581   - 0s - loss: 2.6894e-04 - mean_absolute_error: 0.0074 -
      val_loss: 32.1272 - val_mean_absolute_error: 3.6117
5582  epoch_end_callback epoch 8048 lr 1.5625e-05
5583  Epoch 8050/10000
5584   - 0s - loss: 2.4893e-04 - mean_absolute_error: 0.0068 -
      val_loss: 32.1248 - val_mean_absolute_error: 3.6094
5585
5586  Epoch 08050: saving model to ./model/
      model_Epoch8050_val_mean_absolute_error3.609.h5
5587  epoch_end_callback epoch 8049 lr 1.5625e-05
5588  Epoch 8051/10000
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5589    - 0s - loss: 3.1442e-04 - mean_absolute_error: 0.0087 -
        val_loss: 32.0877 - val_mean_absolute_error: 3.6104
5590  epoch_end_callback epoch 8050 lr 1.5625e-05
5591  Epoch 8052/10000
5592    - 0s - loss: 2.8399e-04 - mean_absolute_error: 0.0080 -
        val_loss: 32.1103 - val_mean_absolute_error: 3.6109
5593  epoch_end_callback epoch 8051 lr 1.5625e-05
5594  Epoch 8053/10000
5595    - 0s - loss: 2.8164e-04 - mean_absolute_error: 0.0083 -
        val_loss: 32.1255 - val_mean_absolute_error: 3.6094
5596  epoch_end_callback epoch 8052 lr 1.5625e-05
5597  Epoch 8054/10000
5598    - 0s - loss: 2.1219e-04 - mean_absolute_error: 0.0071 -
        val_loss: 32.0994 - val_mean_absolute_error: 3.6095
5599  epoch_end_callback epoch 8053 lr 1.5625e-05
5600  Epoch 8055/10000
5601    - 0s - loss: 2.9697e-04 - mean_absolute_error: 0.0087 -
        val_loss: 32.1536 - val_mean_absolute_error: 3.6132
5602  epoch_end_callback epoch 8054 lr 1.5625e-05
5603  Epoch 8056/10000
5604    - 0s - loss: 2.4939e-04 - mean_absolute_error: 0.0075 -
        val_loss: 32.1237 - val_mean_absolute_error: 3.6112
5605  epoch_end_callback epoch 8055 lr 1.5625e-05
5606  Epoch 8057/10000
5607    - 0s - loss: 2.8070e-04 - mean_absolute_error: 0.0076 -
        val_loss: 32.1258 - val_mean_absolute_error: 3.6122
5608  epoch_end_callback epoch 8056 lr 1.5625e-05
5609  Epoch 8058/10000
5610    - 0s - loss: 2.5454e-04 - mean_absolute_error: 0.0081 -
        val_loss: 32.1326 - val_mean_absolute_error: 3.6114
5611  epoch_end_callback epoch 8057 lr 1.5625e-05
5612  Epoch 8059/10000
5613    - 0s - loss: 2.7106e-04 - mean_absolute_error: 0.0077 -
        val_loss: 32.0829 - val_mean_absolute_error: 3.6099
5614  epoch_end_callback epoch 8058 lr 1.5625e-05
5615  Epoch 8060/10000
5616    - 0s - loss: 2.5535e-04 - mean_absolute_error: 0.0081 -
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5616  val_loss: 32.1332 - val_mean_absolute_error: 3.6124

5617

5618  Epoch 08060: saving model to ./model/
      model_Epoch8060_val_mean_absolute_error3.612.h5

5619  epoch_end_callback epoch 8059 lr 1.5625e-05

5620  Epoch 8061/10000

5621   - 0s - loss: 2.2442e-04 - mean_absolute_error: 0.0072 -
      val_loss: 32.1053 - val_mean_absolute_error: 3.6087

5622  epoch_end_callback epoch 8060 lr 1.5625e-05

5623  Epoch 8062/10000

5624   - 0s - loss: 3.1419e-04 - mean_absolute_error: 0.0075 -
      val_loss: 32.1382 - val_mean_absolute_error: 3.6117

5625  epoch_end_callback epoch 8061 lr 1.5625e-05

5626  Epoch 8063/10000

5627   - 0s - loss: 2.7374e-04 - mean_absolute_error: 0.0078 -
      val_loss: 32.1082 - val_mean_absolute_error: 3.6112

5628  epoch_end_callback epoch 8062 lr 1.5625e-05

5629  Epoch 8064/10000

5630   - 0s - loss: 2.6479e-04 - mean_absolute_error: 0.0076 -
      val_loss: 32.1125 - val_mean_absolute_error: 3.6117

5631  epoch_end_callback epoch 8063 lr 1.5625e-05

5632  Epoch 8065/10000

5633   - 0s - loss: 2.6897e-04 - mean_absolute_error: 0.0080 -
      val_loss: 32.1249 - val_mean_absolute_error: 3.6103

5634  epoch_end_callback epoch 8064 lr 1.5625e-05

5635  Epoch 8066/10000

5636   - 0s - loss: 2.7549e-04 - mean_absolute_error: 0.0074 -
      val_loss: 32.1501 - val_mean_absolute_error: 3.6120

5637  epoch_end_callback epoch 8065 lr 1.5625e-05

5638  Epoch 8067/10000

5639   - 0s - loss: 2.6907e-04 - mean_absolute_error: 0.0079 -
      val_loss: 32.1329 - val_mean_absolute_error: 3.6125

5640  epoch_end_callback epoch 8066 lr 1.5625e-05

5641  Epoch 8068/10000

5642   - 0s - loss: 2.5390e-04 - mean_absolute_error: 0.0080 -
      val_loss: 32.1135 - val_mean_absolute_error: 3.6089

5643  epoch_end_callback epoch 8067 lr 1.5625e-05
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5644  Epoch 8069/10000
5645   - 0s - loss: 2.6557e-04 - mean_absolute_error: 0.0075 -
      val_loss: 32.1358 - val_mean_absolute_error: 3.6120
5646  epoch_end_callback epoch 8068 lr 1.5625e-05
5647  Epoch 8070/10000
5648   - 0s - loss: 2.8087e-04 - mean_absolute_error: 0.0078 -
      val_loss: 32.1100 - val_mean_absolute_error: 3.6098
5649
5650  Epoch 08070: saving model to ./model/
      model_Epoch8070_val_mean_absolute_error3.610.h5
5651  epoch_end_callback epoch 8069 lr 1.5625e-05
5652  Epoch 8071/10000
5653   - 0s - loss: 2.5192e-04 - mean_absolute_error: 0.0072 -
      val_loss: 32.1411 - val_mean_absolute_error: 3.6113
5654  epoch_end_callback epoch 8070 lr 1.5625e-05
5655  Epoch 8072/10000
5656   - 0s - loss: 2.6727e-04 - mean_absolute_error: 0.0077 -
      val_loss: 32.1378 - val_mean_absolute_error: 3.6116
5657  epoch_end_callback epoch 8071 lr 1.5625e-05
5658  Epoch 8073/10000
5659   - 0s - loss: 2.7857e-04 - mean_absolute_error: 0.0083 -
      val_loss: 32.1425 - val_mean_absolute_error: 3.6113
5660  epoch_end_callback epoch 8072 lr 1.5625e-05
5661  Epoch 8074/10000
5662   - 0s - loss: 2.3964e-04 - mean_absolute_error: 0.0069 -
      val_loss: 32.0897 - val_mean_absolute_error: 3.6088
5663  epoch_end_callback epoch 8073 lr 1.5625e-05
5664  Epoch 8075/10000
5665   - 0s - loss: 2.9808e-04 - mean_absolute_error: 0.0080 -
      val_loss: 32.1103 - val_mean_absolute_error: 3.6106
5666  epoch_end_callback epoch 8074 lr 1.5625e-05
5667  Epoch 8076/10000
5668   - 0s - loss: 2.7424e-04 - mean_absolute_error: 0.0073 -
      val_loss: 32.1070 - val_mean_absolute_error: 3.6119
5669  epoch_end_callback epoch 8075 lr 1.5625e-05
5670  Epoch 8077/10000
5671   - 0s - loss: 2.4985e-04 - mean_absolute_error: 0.0072 -
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5671  val_loss: 32.1207 - val_mean_absolute_error: 3.6120
5672  epoch_end_callback epoch 8076 lr 1.5625e-05
5673  Epoch 8078/10000
5674   - 0s - loss: 2.5875e-04 - mean_absolute_error: 0.0078 -
      val_loss: 32.0750 - val_mean_absolute_error: 3.6095
5675  epoch_end_callback epoch 8077 lr 1.5625e-05
5676  Epoch 8079/10000
5677   - 0s - loss: 3.0531e-04 - mean_absolute_error: 0.0085 -
      val_loss: 32.1258 - val_mean_absolute_error: 3.6112
5678  epoch_end_callback epoch 8078 lr 1.5625e-05
5679  Epoch 8080/10000
5680   - 0s - loss: 2.5942e-04 - mean_absolute_error: 0.0072 -
      val_loss: 32.1234 - val_mean_absolute_error: 3.6116
5681
5682  Epoch 08080: saving model to ./model/
      model_Epoch8080_val_mean_absolute_error3.612.h5
5683  epoch_end_callback epoch 8079 lr 1.5625e-05
5684  Epoch 8081/10000
5685   - 0s - loss: 2.7575e-04 - mean_absolute_error: 0.0083 -
      val_loss: 32.1057 - val_mean_absolute_error: 3.6101
5686  epoch_end_callback epoch 8080 lr 1.5625e-05
5687  Epoch 8082/10000
5688   - 0s - loss: 3.0839e-04 - mean_absolute_error: 0.0076 -
      val_loss: 32.1302 - val_mean_absolute_error: 3.6109
5689  epoch_end_callback epoch 8081 lr 1.5625e-05
5690  Epoch 8083/10000
5691   - 0s - loss: 2.8128e-04 - mean_absolute_error: 0.0081 -
      val_loss: 32.1292 - val_mean_absolute_error: 3.6117
5692  epoch_end_callback epoch 8082 lr 1.5625e-05
5693  Epoch 8084/10000
5694   - 0s - loss: 2.4645e-04 - mean_absolute_error: 0.0071 -
      val_loss: 32.1246 - val_mean_absolute_error: 3.6112
5695  epoch_end_callback epoch 8083 lr 1.5625e-05
5696  Epoch 8085/10000
5697   - 0s - loss: 2.7455e-04 - mean_absolute_error: 0.0080 -
      val_loss: 32.1368 - val_mean_absolute_error: 3.6109
5698  epoch_end_callback epoch 8084 lr 1.5625e-05
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5699  Epoch 8086/10000
5700   - 0s - loss: 2.5198e-04 - mean_absolute_error: 0.0078 -
       val_loss: 32.1623 - val_mean_absolute_error: 3.6121
5701  epoch_end_callback epoch 8085 lr 1.5625e-05
5702  Epoch 8087/10000
5703   - 0s - loss: 2.5785e-04 - mean_absolute_error: 0.0081 -
       val_loss: 32.1287 - val_mean_absolute_error: 3.6106
5704  epoch_end_callback epoch 8086 lr 1.5625e-05
5705  Epoch 8088/10000
5706   - 0s - loss: 2.7758e-04 - mean_absolute_error: 0.0076 -
       val_loss: 32.1391 - val_mean_absolute_error: 3.6119
5707  epoch_end_callback epoch 8087 lr 1.5625e-05
5708  Epoch 8089/10000
5709   - 0s - loss: 2.5555e-04 - mean_absolute_error: 0.0079 -
       val_loss: 32.1322 - val_mean_absolute_error: 3.6123
5710  epoch_end_callback epoch 8088 lr 1.5625e-05
5711  Epoch 8090/10000
5712   - 0s - loss: 2.7187e-04 - mean_absolute_error: 0.0074 -
       val_loss: 32.1246 - val_mean_absolute_error: 3.6102
5713
5714  Epoch 08090: saving model to ./model/
       model_Epoch8090_val_mean_absolute_error3.610.h5
5715  epoch_end_callback epoch 8089 lr 1.5625e-05
5716  Epoch 8091/10000
5717   - 0s - loss: 3.2752e-04 - mean_absolute_error: 0.0079 -
       val_loss: 32.1290 - val_mean_absolute_error: 3.6114
5718  epoch_end_callback epoch 8090 lr 1.5625e-05
5719  Epoch 8092/10000
5720   - 0s - loss: 2.6448e-04 - mean_absolute_error: 0.0074 -
       val_loss: 32.1021 - val_mean_absolute_error: 3.6103
5721  epoch_end_callback epoch 8091 lr 1.5625e-05
5722  Epoch 8093/10000
5723   - 0s - loss: 2.6761e-04 - mean_absolute_error: 0.0073 -
       val_loss: 32.1414 - val_mean_absolute_error: 3.6121
5724  epoch_end_callback epoch 8092 lr 1.5625e-05
5725  Epoch 8094/10000
5726   - 0s - loss: 2.7186e-04 - mean_absolute_error: 0.0079 -
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5726  val_loss: 32.1324 - val_mean_absolute_error: 3.6101
5727  epoch_end_callback epoch 8093 lr 1.5625e-05
5728  Epoch 8095/10000
5729   - 0s - loss: 2.7891e-04 - mean_absolute_error: 0.0078 -
      val_loss: 32.1309 - val_mean_absolute_error: 3.6120
5730  epoch_end_callback epoch 8094 lr 1.5625e-05
5731  Epoch 8096/10000
5732   - 0s - loss: 2.8504e-04 - mean_absolute_error: 0.0079 -
      val_loss: 32.1293 - val_mean_absolute_error: 3.6120
5733  epoch_end_callback epoch 8095 lr 1.5625e-05
5734  Epoch 8097/10000
5735   - 0s - loss: 2.5056e-04 - mean_absolute_error: 0.0069 -
      val_loss: 32.1121 - val_mean_absolute_error: 3.6102
5736  epoch_end_callback epoch 8096 lr 1.5625e-05
5737  Epoch 8098/10000
5738   - 0s - loss: 2.7346e-04 - mean_absolute_error: 0.0082 -
      val_loss: 32.1303 - val_mean_absolute_error: 3.6108
5739  epoch_end_callback epoch 8097 lr 1.5625e-05
5740  Epoch 8099/10000
5741   - 0s - loss: 2.7350e-04 - mean_absolute_error: 0.0078 -
      val_loss: 32.1421 - val_mean_absolute_error: 3.6122
5742  epoch_end_callback epoch 8098 lr 1.5625e-05
5743  Epoch 8100/10000
5744   - 0s - loss: 2.5736e-04 - mean_absolute_error: 0.0078 -
      val_loss: 32.1379 - val_mean_absolute_error: 3.6105
5745
5746  Epoch 08100: saving model to ./model/
      model_Epoch8100_val_mean_absolute_error3.611.h5
5747  epoch_end_callback epoch 8099 lr 1.5625e-05
5748  Epoch 8101/10000
5749   - 0s - loss: 2.0371e-04 - mean_absolute_error: 0.0062 -
      val_loss: 32.1399 - val_mean_absolute_error: 3.6131
5750  epoch_end_callback epoch 8100 lr 1.5625e-05
5751  Epoch 8102/10000
5752   - 0s - loss: 3.0614e-04 - mean_absolute_error: 0.0092 -
      val_loss: 32.1510 - val_mean_absolute_error: 3.6118
5753  epoch_end_callback epoch 8101 lr 1.5625e-05
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5754  Epoch 8103/10000
5755   - 0s - loss: 2.7618e-04 - mean_absolute_error: 0.0081 -
      val_loss: 32.1283 - val_mean_absolute_error: 3.6117
5756  epoch_end_callback epoch 8102 lr 1.5625e-05
5757  Epoch 8104/10000
5758   - 0s - loss: 2.3946e-04 - mean_absolute_error: 0.0074 -
      val_loss: 32.1525 - val_mean_absolute_error: 3.6130
5759  epoch_end_callback epoch 8103 lr 1.5625e-05
5760  Epoch 8105/10000
5761   - 0s - loss: 2.7300e-04 - mean_absolute_error: 0.0074 -
      val_loss: 32.1239 - val_mean_absolute_error: 3.6116
5762  epoch_end_callback epoch 8104 lr 1.5625e-05
5763  Epoch 8106/10000
5764   - 0s - loss: 2.7247e-04 - mean_absolute_error: 0.0082 -
      val_loss: 32.0945 - val_mean_absolute_error: 3.6108
5765  epoch_end_callback epoch 8105 lr 1.5625e-05
5766  Epoch 8107/10000
5767   - 0s - loss: 3.0738e-04 - mean_absolute_error: 0.0079 -
      val_loss: 32.1032 - val_mean_absolute_error: 3.6094
5768  epoch_end_callback epoch 8106 lr 1.5625e-05
5769  Epoch 8108/10000
5770   - 0s - loss: 2.7260e-04 - mean_absolute_error: 0.0077 -
      val_loss: 32.0767 - val_mean_absolute_error: 3.6098
5771  epoch_end_callback epoch 8107 lr 1.5625e-05
5772  Epoch 8109/10000
5773   - 0s - loss: 2.5074e-04 - mean_absolute_error: 0.0072 -
      val_loss: 32.1388 - val_mean_absolute_error: 3.6114
5774  epoch_end_callback epoch 8108 lr 1.5625e-05
5775  Epoch 8110/10000
5776   - 0s - loss: 2.4401e-04 - mean_absolute_error: 0.0069 -
      val_loss: 32.1386 - val_mean_absolute_error: 3.6120
5777
5778  Epoch 08110: saving model to ./model/
      model_Epoch8110_val_mean_absolute_error3.612.h5
5779  epoch_end_callback epoch 8109 lr 1.5625e-05
5780  Epoch 8111/10000
5781   - 0s - loss: 2.4511e-04 - mean_absolute_error: 0.0071 -
```

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5781  val_loss: 32.1014 - val_mean_absolute_error: 3.6108
5782  epoch_end_callback epoch 8110 lr 1.5625e-05
5783  Epoch 8112/10000
5784   - 0s - loss: 2.7715e-04 - mean_absolute_error: 0.0077 -
      val_loss: 32.1285 - val_mean_absolute_error: 3.6125
5785  epoch_end_callback epoch 8111 lr 1.5625e-05
5786  Epoch 8113/10000
5787   - 0s - loss: 2.6951e-04 - mean_absolute_error: 0.0082 -
      val_loss: 32.1294 - val_mean_absolute_error: 3.6107
5788  epoch_end_callback epoch 8112 lr 1.5625e-05
5789  Epoch 8114/10000
5790   - 0s - loss: 2.7584e-04 - mean_absolute_error: 0.0081 -
      val_loss: 32.1182 - val_mean_absolute_error: 3.6109
5791  epoch_end_callback epoch 8113 lr 1.5625e-05
5792  Epoch 8115/10000
5793   - 0s - loss: 2.5000e-04 - mean_absolute_error: 0.0072 -
      val_loss: 32.1414 - val_mean_absolute_error: 3.6114
5794  epoch_end_callback epoch 8114 lr 1.5625e-05
5795  Epoch 8116/10000
5796   - 0s - loss: 2.8730e-04 - mean_absolute_error: 0.0086 -
      val_loss: 32.1234 - val_mean_absolute_error: 3.6108
5797  epoch_end_callback epoch 8115 lr 1.5625e-05
5798  Epoch 8117/10000
5799   - 0s - loss: 2.7411e-04 - mean_absolute_error: 0.0078 -
      val_loss: 32.1107 - val_mean_absolute_error: 3.6110
5800  epoch_end_callback epoch 8116 lr 1.5625e-05
5801  Epoch 8118/10000
5802   - 0s - loss: 2.6647e-04 - mean_absolute_error: 0.0070 -
      val_loss: 32.1195 - val_mean_absolute_error: 3.6120
5803  epoch_end_callback epoch 8117 lr 1.5625e-05
5804  Epoch 8119/10000
5805   - 0s - loss: 3.0848e-04 - mean_absolute_error: 0.0077 -
      val_loss: 32.1146 - val_mean_absolute_error: 3.6103
5806  epoch_end_callback epoch 8118 lr 1.5625e-05
5807  Epoch 8120/10000
5808   - 0s - loss: 2.5254e-04 - mean_absolute_error: 0.0070 -
      val_loss: 32.1088 - val_mean_absolute_error: 3.6112
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5809
5810   Epoch 08120: saving model to ./model/
       model_Epoch8120_val_mean_absolute_error3.611.h5
5811   epoch_end_callback epoch 8119 lr 1.5625e-05
5812   Epoch 8121/10000
5813    - 0s - loss: 2.6254e-04 - mean_absolute_error: 0.0075 -
       val_loss: 32.1182 - val_mean_absolute_error: 3.6111
5814   epoch_end_callback epoch 8120 lr 1.5625e-05
5815   Epoch 8122/10000
5816    - 0s - loss: 2.8611e-04 - mean_absolute_error: 0.0087 -
       val_loss: 32.1137 - val_mean_absolute_error: 3.6103
5817   epoch_end_callback epoch 8121 lr 1.5625e-05
5818   Epoch 8123/10000
5819    - 0s - loss: 2.1609e-04 - mean_absolute_error: 0.0070 -
       val_loss: 32.1168 - val_mean_absolute_error: 3.6114
5820   epoch_end_callback epoch 8122 lr 1.5625e-05
5821   Epoch 8124/10000
5822    - 0s - loss: 3.0905e-04 - mean_absolute_error: 0.0071 -
       val_loss: 32.1284 - val_mean_absolute_error: 3.6106
5823   epoch_end_callback epoch 8123 lr 1.5625e-05
5824   Epoch 8125/10000
5825    - 0s - loss: 2.8142e-04 - mean_absolute_error: 0.0078 -
       val_loss: 32.1297 - val_mean_absolute_error: 3.6115
5826   epoch_end_callback epoch 8124 lr 1.5625e-05
5827   Epoch 8126/10000
5828    - 0s - loss: 2.6663e-04 - mean_absolute_error: 0.0072 -
       val_loss: 32.0984 - val_mean_absolute_error: 3.6106
5829   epoch_end_callback epoch 8125 lr 1.5625e-05
5830   Epoch 8127/10000
5831    - 0s - loss: 2.7374e-04 - mean_absolute_error: 0.0077 -
       val_loss: 32.1419 - val_mean_absolute_error: 3.6122
5832   epoch_end_callback epoch 8126 lr 1.5625e-05
5833   Epoch 8128/10000
5834    - 0s - loss: 2.7472e-04 - mean_absolute_error: 0.0076 -
       val_loss: 32.1143 - val_mean_absolute_error: 3.6104
5835   epoch_end_callback epoch 8127 lr 1.5625e-05
5836   Epoch 8129/10000
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5837    - 0s - loss: 2.6549e-04 - mean_absolute_error: 0.0079 -
        val_loss: 32.1254 - val_mean_absolute_error: 3.6118
5838  epoch_end_callback epoch 8128 lr 1.5625e-05
5839  Epoch 8130/10000
5840    - 0s - loss: 2.4994e-04 - mean_absolute_error: 0.0068 -
        val_loss: 32.1450 - val_mean_absolute_error: 3.6136
5841
5842  Epoch 08130: saving model to ./model/
        model_Epoch8130_val_mean_absolute_error3.614.h5
5843  epoch_end_callback epoch 8129 lr 1.5625e-05
5844  Epoch 8131/10000
5845    - 0s - loss: 2.9097e-04 - mean_absolute_error: 0.0085 -
        val_loss: 32.1318 - val_mean_absolute_error: 3.6114
5846  epoch_end_callback epoch 8130 lr 1.5625e-05
5847  Epoch 8132/10000
5848    - 0s - loss: 2.5367e-04 - mean_absolute_error: 0.0078 -
        val_loss: 32.1339 - val_mean_absolute_error: 3.6122
5849  epoch_end_callback epoch 8131 lr 1.5625e-05
5850  Epoch 8133/10000
5851    - 0s - loss: 2.6973e-04 - mean_absolute_error: 0.0076 -
        val_loss: 32.1040 - val_mean_absolute_error: 3.6109
5852  epoch_end_callback epoch 8132 lr 1.5625e-05
5853  Epoch 8134/10000
5854    - 0s - loss: 2.5038e-04 - mean_absolute_error: 0.0084 -
        val_loss: 32.1247 - val_mean_absolute_error: 3.6136
5855  epoch_end_callback epoch 8133 lr 1.5625e-05
5856  Epoch 8135/10000
5857    - 0s - loss: 2.5362e-04 - mean_absolute_error: 0.0072 -
        val_loss: 32.1311 - val_mean_absolute_error: 3.6115
5858  epoch_end_callback epoch 8134 lr 1.5625e-05
5859  Epoch 8136/10000
5860    - 0s - loss: 2.9027e-04 - mean_absolute_error: 0.0080 -
        val_loss: 32.1404 - val_mean_absolute_error: 3.6114
5861  epoch_end_callback epoch 8135 lr 1.5625e-05
5862  Epoch 8137/10000
5863    - 0s - loss: 2.6037e-04 - mean_absolute_error: 0.0075 -
        val_loss: 32.1294 - val_mean_absolute_error: 3.6113
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5864  epoch_end_callback epoch 8136 lr 1.5625e-05
5865  Epoch 8138/10000
5866   - 0s - loss: 2.6701e-04 - mean_absolute_error: 0.0071 -
      val_loss: 32.1495 - val_mean_absolute_error: 3.6126
5867  epoch_end_callback epoch 8137 lr 1.5625e-05
5868  Epoch 8139/10000
5869   - 0s - loss: 3.0927e-04 - mean_absolute_error: 0.0084 -
      val_loss: 32.1352 - val_mean_absolute_error: 3.6123
5870  epoch_end_callback epoch 8138 lr 1.5625e-05
5871  Epoch 8140/10000
5872   - 0s - loss: 2.7036e-04 - mean_absolute_error: 0.0062 -
      val_loss: 32.1038 - val_mean_absolute_error: 3.6117
5873
5874  Epoch 08140: saving model to ./model/
      model_Epoch8140_val_mean_absolute_error3.612.h5
5875  epoch_end_callback epoch 8139 lr 1.5625e-05
5876  Epoch 8141/10000
5877   - 0s - loss: 2.2273e-04 - mean_absolute_error: 0.0061 -
      val_loss: 32.1141 - val_mean_absolute_error: 3.6111
5878  epoch_end_callback epoch 8140 lr 1.5625e-05
5879  Epoch 8142/10000
5880   - 0s - loss: 2.4029e-04 - mean_absolute_error: 0.0081 -
      val_loss: 32.1422 - val_mean_absolute_error: 3.6114
5881  epoch_end_callback epoch 8141 lr 1.5625e-05
5882  Epoch 8143/10000
5883   - 0s - loss: 2.6272e-04 - mean_absolute_error: 0.0077 -
      val_loss: 32.1312 - val_mean_absolute_error: 3.6105
5884  epoch_end_callback epoch 8142 lr 1.5625e-05
5885  Epoch 8144/10000
5886   - 0s - loss: 2.9140e-04 - mean_absolute_error: 0.0086 -
      val_loss: 32.1181 - val_mean_absolute_error: 3.6123
5887  epoch_end_callback epoch 8143 lr 1.5625e-05
5888  Epoch 8145/10000
5889   - 0s - loss: 2.2670e-04 - mean_absolute_error: 0.0071 -
      val_loss: 32.1377 - val_mean_absolute_error: 3.6117
5890  epoch_end_callback epoch 8144 lr 1.5625e-05
5891  Epoch 8146/10000
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5892    - 0s - loss: 2.6786e-04 - mean_absolute_error: 0.0075 -
        val_loss: 32.1202 - val_mean_absolute_error: 3.6124
5893  epoch_end_callback epoch 8145 lr 1.5625e-05
5894  Epoch 8147/10000
5895    - 0s - loss: 2.0955e-04 - mean_absolute_error: 0.0066 -
        val_loss: 32.1088 - val_mean_absolute_error: 3.6110
5896  epoch_end_callback epoch 8146 lr 1.5625e-05
5897  Epoch 8148/10000
5898    - 0s - loss: 3.0013e-04 - mean_absolute_error: 0.0085 -
        val_loss: 32.1074 - val_mean_absolute_error: 3.6108
5899  epoch_end_callback epoch 8147 lr 1.5625e-05
5900  Epoch 8149/10000
5901    - 0s - loss: 2.5747e-04 - mean_absolute_error: 0.0078 -
        val_loss: 32.1467 - val_mean_absolute_error: 3.6131
5902  epoch_end_callback epoch 8148 lr 1.5625e-05
5903  Epoch 8150/10000
5904    - 0s - loss: 2.2328e-04 - mean_absolute_error: 0.0069 -
        val_loss: 32.1403 - val_mean_absolute_error: 3.6115
5905
5906  Epoch 08150: saving model to ./model/
        model_Epoch8150_val_mean_absolute_error3.612.h5
5907  epoch_end_callback epoch 8149 lr 1.5625e-05
5908  Epoch 8151/10000
5909    - 0s - loss: 2.6210e-04 - mean_absolute_error: 0.0068 -
        val_loss: 32.0771 - val_mean_absolute_error: 3.6088
5910  epoch_end_callback epoch 8150 lr 1.5625e-05
5911  Epoch 8152/10000
5912    - 0s - loss: 2.7469e-04 - mean_absolute_error: 0.0084 -
        val_loss: 32.0941 - val_mean_absolute_error: 3.6105
5913  epoch_end_callback epoch 8151 lr 1.5625e-05
5914  Epoch 8153/10000
5915    - 0s - loss: 2.6759e-04 - mean_absolute_error: 0.0080 -
        val_loss: 32.1087 - val_mean_absolute_error: 3.6104
5916  epoch_end_callback epoch 8152 lr 1.5625e-05
5917  Epoch 8154/10000
5918    - 0s - loss: 2.5753e-04 - mean_absolute_error: 0.0076 -
        val_loss: 32.1175 - val_mean_absolute_error: 3.6103
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5919  epoch_end_callback epoch 8153 lr 1.5625e-05
5920  Epoch 8155/10000
5921   - 0s - loss: 2.4039e-04 - mean_absolute_error: 0.0070 -
      val_loss: 32.1418 - val_mean_absolute_error: 3.6093
5922  epoch_end_callback epoch 8154 lr 1.5625e-05
5923  Epoch 8156/10000
5924   - 0s - loss: 2.9141e-04 - mean_absolute_error: 0.0076 -
      val_loss: 32.1315 - val_mean_absolute_error: 3.6114
5925  epoch_end_callback epoch 8155 lr 1.5625e-05
5926  Epoch 8157/10000
5927   - 0s - loss: 2.5275e-04 - mean_absolute_error: 0.0074 -
      val_loss: 32.1405 - val_mean_absolute_error: 3.6137
5928  epoch_end_callback epoch 8156 lr 1.5625e-05
5929  Epoch 8158/10000
5930   - 0s - loss: 2.3901e-04 - mean_absolute_error: 0.0066 -
      val_loss: 32.1247 - val_mean_absolute_error: 3.6112
5931  epoch_end_callback epoch 8157 lr 1.5625e-05
5932  Epoch 8159/10000
5933   - 0s - loss: 2.3950e-04 - mean_absolute_error: 0.0082 -
      val_loss: 32.1213 - val_mean_absolute_error: 3.6110
5934  epoch_end_callback epoch 8158 lr 1.5625e-05
5935  Epoch 8160/10000
5936   - 0s - loss: 2.9256e-04 - mean_absolute_error: 0.0087 -
      val_loss: 32.1262 - val_mean_absolute_error: 3.6118
5937
5938  Epoch 08160: saving model to ./model/
      model_Epoch8160_val_mean_absolute_error3.612.h5
5939  epoch_end_callback epoch 8159 lr 1.5625e-05
5940  Epoch 8161/10000
5941   - 0s - loss: 2.4159e-04 - mean_absolute_error: 0.0071 -
      val_loss: 32.1154 - val_mean_absolute_error: 3.6119
5942  epoch_end_callback epoch 8160 lr 1.5625e-05
5943  Epoch 8162/10000
5944   - 0s - loss: 2.8481e-04 - mean_absolute_error: 0.0079 -
      val_loss: 32.1424 - val_mean_absolute_error: 3.6121
5945  epoch_end_callback epoch 8161 lr 1.5625e-05
5946  Epoch 8163/10000
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5947   - 0s - loss: 2.4000e-04 - mean_absolute_error: 0.0078 -
       val_loss: 32.1268 - val_mean_absolute_error: 3.6113
5948  epoch_end_callback epoch 8162 lr 1.5625e-05
5949  Epoch 8164/10000
5950   - 0s - loss: 2.4991e-04 - mean_absolute_error: 0.0082 -
       val_loss: 32.1400 - val_mean_absolute_error: 3.6132
5951  epoch_end_callback epoch 8163 lr 1.5625e-05
5952  Epoch 8165/10000
5953   - 0s - loss: 2.4944e-04 - mean_absolute_error: 0.0066 -
       val_loss: 32.1395 - val_mean_absolute_error: 3.6119
5954  epoch_end_callback epoch 8164 lr 1.5625e-05
5955  Epoch 8166/10000
5956   - 0s - loss: 2.8271e-04 - mean_absolute_error: 0.0083 -
       val_loss: 32.1410 - val_mean_absolute_error: 3.6130
5957  epoch_end_callback epoch 8165 lr 1.5625e-05
5958  Epoch 8167/10000
5959   - 0s - loss: 2.3553e-04 - mean_absolute_error: 0.0070 -
       val_loss: 32.1244 - val_mean_absolute_error: 3.6112
5960  epoch_end_callback epoch 8166 lr 1.5625e-05
5961  Epoch 8168/10000
5962   - 0s - loss: 2.5940e-04 - mean_absolute_error: 0.0075 -
       val_loss: 32.1343 - val_mean_absolute_error: 3.6106
5963  epoch_end_callback epoch 8167 lr 1.5625e-05
5964  Epoch 8169/10000
5965   - 0s - loss: 2.8616e-04 - mean_absolute_error: 0.0081 -
       val_loss: 32.1384 - val_mean_absolute_error: 3.6119
5966  epoch_end_callback epoch 8168 lr 1.5625e-05
5967  Epoch 8170/10000
5968   - 0s - loss: 2.9610e-04 - mean_absolute_error: 0.0086 -
       val_loss: 32.1311 - val_mean_absolute_error: 3.6101
5969
5970  Epoch 08170: saving model to ./model/
       model_Epoch8170_val_mean_absolute_error3.610.h5
5971  epoch_end_callback epoch 8169 lr 1.5625e-05
5972  Epoch 8171/10000
5973   - 0s - loss: 2.4490e-04 - mean_absolute_error: 0.0066 -
       val_loss: 32.1191 - val_mean_absolute_error: 3.6120
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5974 epoch_end_callback epoch 8170 lr 1.5625e-05
5975 Epoch 8172/10000
5976  - 0s - loss: 2.9536e-04 - mean_absolute_error: 0.0071 - val_loss: 32.1519 - val_mean_absolute_error: 3.6121
5977 epoch_end_callback epoch 8171 lr 1.5625e-05
5978 Epoch 8173/10000
5979  - 0s - loss: 2.5733e-04 - mean_absolute_error: 0.0078 - val_loss: 32.1453 - val_mean_absolute_error: 3.6120
5980 epoch_end_callback epoch 8172 lr 1.5625e-05
5981 Epoch 8174/10000
5982  - 0s - loss: 2.7132e-04 - mean_absolute_error: 0.0083 - val_loss: 32.1284 - val_mean_absolute_error: 3.6105
5983 epoch_end_callback epoch 8173 lr 1.5625e-05
5984 Epoch 8175/10000
5985  - 0s - loss: 2.4460e-04 - mean_absolute_error: 0.0080 - val_loss: 32.1400 - val_mean_absolute_error: 3.6114
5986 epoch_end_callback epoch 8174 lr 1.5625e-05
5987 Epoch 8176/10000
5988  - 0s - loss: 2.4238e-04 - mean_absolute_error: 0.0080 - val_loss: 32.1265 - val_mean_absolute_error: 3.6093
5989 epoch_end_callback epoch 8175 lr 1.5625e-05
5990 Epoch 8177/10000
5991  - 0s - loss: 2.2955e-04 - mean_absolute_error: 0.0072 - val_loss: 32.1428 - val_mean_absolute_error: 3.6130
5992 epoch_end_callback epoch 8176 lr 1.5625e-05
5993 Epoch 8178/10000
5994  - 0s - loss: 2.4617e-04 - mean_absolute_error: 0.0079 - val_loss: 32.1551 - val_mean_absolute_error: 3.6126
5995 epoch_end_callback epoch 8177 lr 1.5625e-05
5996 Epoch 8179/10000
5997  - 0s - loss: 2.5386e-04 - mean_absolute_error: 0.0075 - val_loss: 32.1416 - val_mean_absolute_error: 3.6099
5998 epoch_end_callback epoch 8178 lr 1.5625e-05
5999 Epoch 8180/10000
6000  - 0s - loss: 2.6786e-04 - mean_absolute_error: 0.0083 - val_loss: 32.1096 - val_mean_absolute_error: 3.6114
6001
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6002  Epoch 08180: saving model to ./model/
      model_Epoch8180_val_mean_absolute_error3.611.h5
6003  epoch_end_callback epoch 8179 lr 1.5625e-05
6004  Epoch 8181/10000
6005   - 0s - loss: 2.6526e-04 - mean_absolute_error: 0.0069 -
      val_loss: 32.1199 - val_mean_absolute_error: 3.6117
6006  epoch_end_callback epoch 8180 lr 1.5625e-05
6007  Epoch 8182/10000
6008   - 0s - loss: 2.6324e-04 - mean_absolute_error: 0.0077 -
      val_loss: 32.1617 - val_mean_absolute_error: 3.6128
6009  epoch_end_callback epoch 8181 lr 1.5625e-05
6010  Epoch 8183/10000
6011   - 0s - loss: 2.0557e-04 - mean_absolute_error: 0.0067 -
      val_loss: 32.1261 - val_mean_absolute_error: 3.6120
6012  epoch_end_callback epoch 8182 lr 1.5625e-05
6013  Epoch 8184/10000
6014   - 0s - loss: 3.0174e-04 - mean_absolute_error: 0.0096 -
      val_loss: 32.1474 - val_mean_absolute_error: 3.6118
6015  epoch_end_callback epoch 8183 lr 1.5625e-05
6016  Epoch 8185/10000
6017   - 0s - loss: 2.4693e-04 - mean_absolute_error: 0.0070 -
      val_loss: 32.1529 - val_mean_absolute_error: 3.6104
6018  epoch_end_callback epoch 8184 lr 1.5625e-05
6019  Epoch 8186/10000
6020   - 0s - loss: 2.8621e-04 - mean_absolute_error: 0.0076 -
      val_loss: 32.1653 - val_mean_absolute_error: 3.6130
6021  epoch_end_callback epoch 8185 lr 1.5625e-05
6022  Epoch 8187/10000
6023   - 0s - loss: 2.8245e-04 - mean_absolute_error: 0.0077 -
      val_loss: 32.1303 - val_mean_absolute_error: 3.6117
6024  epoch_end_callback epoch 8186 lr 1.5625e-05
6025  Epoch 8188/10000
6026   - 0s - loss: 2.4248e-04 - mean_absolute_error: 0.0074 -
      val_loss: 32.1265 - val_mean_absolute_error: 3.6119
6027  epoch_end_callback epoch 8187 lr 1.5625e-05
6028  Epoch 8189/10000
6029   - 0s - loss: 2.7074e-04 - mean_absolute_error: 0.0080 -
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6029  val_loss: 32.1412 - val_mean_absolute_error: 3.6128
6030  epoch_end_callback epoch 8188 lr 1.5625e-05
6031  Epoch 8190/10000
6032   - 0s - loss: 2.6029e-04 - mean_absolute_error: 0.0075 -
      val_loss: 32.1439 - val_mean_absolute_error: 3.6143
6033
6034  Epoch 08190: saving model to ./model/
      model_Epoch8190_val_mean_absolute_error3.614.h5
6035  epoch_end_callback epoch 8189 lr 1.5625e-05
6036  Epoch 8191/10000
6037   - 0s - loss: 2.5249e-04 - mean_absolute_error: 0.0072 -
      val_loss: 32.0917 - val_mean_absolute_error: 3.6101
6038  epoch_end_callback epoch 8190 lr 1.5625e-05
6039  Epoch 8192/10000
6040   - 0s - loss: 2.1941e-04 - mean_absolute_error: 0.0071 -
      val_loss: 32.1410 - val_mean_absolute_error: 3.6112
6041  epoch_end_callback epoch 8191 lr 1.5625e-05
6042  Epoch 8193/10000
6043   - 0s - loss: 2.6255e-04 - mean_absolute_error: 0.0085 -
      val_loss: 32.1476 - val_mean_absolute_error: 3.6123
6044  epoch_end_callback epoch 8192 lr 1.5625e-05
6045  Epoch 8194/10000
6046   - 0s - loss: 2.4061e-04 - mean_absolute_error: 0.0075 -
      val_loss: 32.1348 - val_mean_absolute_error: 3.6119
6047  epoch_end_callback epoch 8193 lr 1.5625e-05
6048  Epoch 8195/10000
6049   - 0s - loss: 2.7318e-04 - mean_absolute_error: 0.0080 -
      val_loss: 32.1382 - val_mean_absolute_error: 3.6121
6050  epoch_end_callback epoch 8194 lr 1.5625e-05
6051  Epoch 8196/10000
6052   - 0s - loss: 2.5561e-04 - mean_absolute_error: 0.0077 -
      val_loss: 32.1056 - val_mean_absolute_error: 3.6077
6053  epoch_end_callback epoch 8195 lr 1.5625e-05
6054  Epoch 8197/10000
6055   - 0s - loss: 2.2461e-04 - mean_absolute_error: 0.0070 -
      val_loss: 32.1499 - val_mean_absolute_error: 3.6126
6056  epoch_end_callback epoch 8196 lr 1.5625e-05
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6057  Epoch 8198/10000
6058   - 0s - loss: 2.7971e-04 - mean_absolute_error: 0.0086 -
      val_loss: 32.1226 - val_mean_absolute_error: 3.6123
6059  epoch_end_callback epoch 8197 lr 1.5625e-05
6060  Epoch 8199/10000
6061   - 0s - loss: 2.6624e-04 - mean_absolute_error: 0.0079 -
      val_loss: 32.1422 - val_mean_absolute_error: 3.6130
6062  epoch_end_callback epoch 8198 lr 1.5625e-05
6063  Epoch 8200/10000
6064   - 0s - loss: 2.3811e-04 - mean_absolute_error: 0.0076 -
      val_loss: 32.1426 - val_mean_absolute_error: 3.6126
6065
6066  Epoch 08200: saving model to ./model/
      model_Epoch8200_val_mean_absolute_error3.613.h5
6067  epoch_end_callback epoch 8199 lr 1.5625e-05
6068  Epoch 8201/10000
6069   - 0s - loss: 2.5462e-04 - mean_absolute_error: 0.0076 -
      val_loss: 32.1145 - val_mean_absolute_error: 3.6097
6070  epoch_end_callback epoch 8200 lr 1.5625e-05
6071  Epoch 8202/10000
6072   - 0s - loss: 2.8126e-04 - mean_absolute_error: 0.0080 -
      val_loss: 32.1336 - val_mean_absolute_error: 3.6116
6073  epoch_end_callback epoch 8201 lr 1.5625e-05
6074  Epoch 8203/10000
6075   - 0s - loss: 2.4629e-04 - mean_absolute_error: 0.0076 -
      val_loss: 32.1277 - val_mean_absolute_error: 3.6126
6076  epoch_end_callback epoch 8202 lr 1.5625e-05
6077  Epoch 8204/10000
6078   - 0s - loss: 2.8178e-04 - mean_absolute_error: 0.0066 -
      val_loss: 32.1603 - val_mean_absolute_error: 3.6130
6079  epoch_end_callback epoch 8203 lr 1.5625e-05
6080  Epoch 8205/10000
6081   - 0s - loss: 2.3424e-04 - mean_absolute_error: 0.0069 -
      val_loss: 32.1296 - val_mean_absolute_error: 3.6112
6082  epoch_end_callback epoch 8204 lr 1.5625e-05
6083  Epoch 8206/10000
6084   - 0s - loss: 2.6700e-04 - mean_absolute_error: 0.0078 -
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6084  val_loss: 32.1533 - val_mean_absolute_error: 3.6132
6085  epoch_end_callback epoch 8205 lr 1.5625e-05
6086  Epoch 8207/10000
6087   - 0s - loss: 2.3856e-04 - mean_absolute_error: 0.0072 -
      val_loss: 32.1392 - val_mean_absolute_error: 3.6117
6088  epoch_end_callback epoch 8206 lr 1.5625e-05
6089  Epoch 8208/10000
6090   - 0s - loss: 2.6636e-04 - mean_absolute_error: 0.0077 -
      val_loss: 32.1396 - val_mean_absolute_error: 3.6117
6091  epoch_end_callback epoch 8207 lr 1.5625e-05
6092  Epoch 8209/10000
6093   - 0s - loss: 2.6414e-04 - mean_absolute_error: 0.0073 -
      val_loss: 32.1118 - val_mean_absolute_error: 3.6114
6094  epoch_end_callback epoch 8208 lr 1.5625e-05
6095  Epoch 8210/10000
6096   - 0s - loss: 2.5780e-04 - mean_absolute_error: 0.0078 -
      val_loss: 32.1042 - val_mean_absolute_error: 3.6111
6097
6098  Epoch 08210: saving model to ./model/
      model_Epoch8210_val_mean_absolute_error3.611.h5
6099  epoch_end_callback epoch 8209 lr 1.5625e-05
6100  Epoch 8211/10000
6101   - 0s - loss: 2.5714e-04 - mean_absolute_error: 0.0075 -
      val_loss: 32.1234 - val_mean_absolute_error: 3.6122
6102  epoch_end_callback epoch 8210 lr 1.5625e-05
6103  Epoch 8212/10000
6104   - 0s - loss: 2.6009e-04 - mean_absolute_error: 0.0081 -
      val_loss: 32.1534 - val_mean_absolute_error: 3.6135
6105  epoch_end_callback epoch 8211 lr 1.5625e-05
6106  Epoch 8213/10000
6107   - 0s - loss: 2.5581e-04 - mean_absolute_error: 0.0073 -
      val_loss: 32.1219 - val_mean_absolute_error: 3.6116
6108  epoch_end_callback epoch 8212 lr 1.5625e-05
6109  Epoch 8214/10000
6110   - 0s - loss: 2.7802e-04 - mean_absolute_error: 0.0067 -
      val_loss: 32.1258 - val_mean_absolute_error: 3.6133
6111  epoch_end_callback epoch 8213 lr 1.5625e-05
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6112  Epoch 8215/10000
6113   - 0s - loss: 2.8447e-04 - mean_absolute_error: 0.0079 - val_loss: 32.1309 - val_mean_absolute_error: 3.6119
6114  epoch_end_callback epoch 8214 lr 1.5625e-05
6115  Epoch 8216/10000
6116   - 0s - loss: 2.7794e-04 - mean_absolute_error: 0.0079 - val_loss: 32.1318 - val_mean_absolute_error: 3.6116
6117  epoch_end_callback epoch 8215 lr 1.5625e-05
6118  Epoch 8217/10000
6119   - 0s - loss: 2.4730e-04 - mean_absolute_error: 0.0069 - val_loss: 32.0998 - val_mean_absolute_error: 3.6101
6120  epoch_end_callback epoch 8216 lr 1.5625e-05
6121  Epoch 8218/10000
6122   - 0s - loss: 2.5945e-04 - mean_absolute_error: 0.0077 - val_loss: 32.1305 - val_mean_absolute_error: 3.6124
6123  epoch_end_callback epoch 8217 lr 1.5625e-05
6124  Epoch 8219/10000
6125   - 0s - loss: 2.5546e-04 - mean_absolute_error: 0.0071 - val_loss: 32.1169 - val_mean_absolute_error: 3.6116
6126  epoch_end_callback epoch 8218 lr 1.5625e-05
6127  Epoch 8220/10000
6128   - 0s - loss: 2.7220e-04 - mean_absolute_error: 0.0081 - val_loss: 32.1655 - val_mean_absolute_error: 3.6129
6129
6130  Epoch 08220: saving model to ./model/model_Epoch8220_val_mean_absolute_error3.613.h5
6131  epoch_end_callback epoch 8219 lr 1.5625e-05
6132  Epoch 8221/10000
6133   - 0s - loss: 2.5682e-04 - mean_absolute_error: 0.0075 - val_loss: 32.1254 - val_mean_absolute_error: 3.6113
6134  epoch_end_callback epoch 8220 lr 1.5625e-05
6135  Epoch 8222/10000
6136   - 0s - loss: 2.4749e-04 - mean_absolute_error: 0.0073 - val_loss: 32.1065 - val_mean_absolute_error: 3.6111
6137  epoch_end_callback epoch 8221 lr 1.5625e-05
6138  Epoch 8223/10000
6139   - 0s - loss: 2.9200e-04 - mean_absolute_error: 0.0085 -
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6139 val_loss: 32.1258 - val_mean_absolute_error: 3.6115
6140 epoch_end_callback epoch 8222 lr 1.5625e-05
6141 Epoch 8224/10000
6142  - 0s - loss: 2.5854e-04 - mean_absolute_error: 0.0070 -
     val_loss: 32.1304 - val_mean_absolute_error: 3.6118
6143 epoch_end_callback epoch 8223 lr 1.5625e-05
6144 Epoch 8225/10000
6145  - 0s - loss: 2.5535e-04 - mean_absolute_error: 0.0075 -
     val_loss: 32.1278 - val_mean_absolute_error: 3.6116
6146 epoch_end_callback epoch 8224 lr 1.5625e-05
6147 Epoch 8226/10000
6148  - 0s - loss: 2.8846e-04 - mean_absolute_error: 0.0085 -
     val_loss: 32.1372 - val_mean_absolute_error: 3.6125
6149 epoch_end_callback epoch 8225 lr 1.5625e-05
6150 Epoch 8227/10000
6151  - 0s - loss: 2.5766e-04 - mean_absolute_error: 0.0073 -
     val_loss: 32.1158 - val_mean_absolute_error: 3.6122
6152 epoch_end_callback epoch 8226 lr 1.5625e-05
6153 Epoch 8228/10000
6154  - 0s - loss: 2.9542e-04 - mean_absolute_error: 0.0080 -
     val_loss: 32.1432 - val_mean_absolute_error: 3.6135
6155 epoch_end_callback epoch 8227 lr 1.5625e-05
6156 Epoch 8229/10000
6157  - 0s - loss: 2.7674e-04 - mean_absolute_error: 0.0074 -
     val_loss: 32.1327 - val_mean_absolute_error: 3.6123
6158 epoch_end_callback epoch 8228 lr 1.5625e-05
6159 Epoch 8230/10000
6160  - 0s - loss: 2.4751e-04 - mean_absolute_error: 0.0067 -
     val_loss: 32.1172 - val_mean_absolute_error: 3.6114
6161
6162 Epoch 08230: saving model to ./model/
     model_Epoch8230_val_mean_absolute_error3.611.h5
6163 epoch_end_callback epoch 8229 lr 1.5625e-05
6164 Epoch 8231/10000
6165  - 0s - loss: 2.6967e-04 - mean_absolute_error: 0.0075 -
     val_loss: 32.1382 - val_mean_absolute_error: 3.6126
6166 epoch_end_callback epoch 8230 lr 1.5625e-05
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6167  Epoch 8232/10000
6168   - 0s - loss: 2.5789e-04 - mean_absolute_error: 0.0081 -
      val_loss: 32.1230 - val_mean_absolute_error: 3.6110
6169  epoch_end_callback epoch 8231 lr 1.5625e-05
6170  Epoch 8233/10000
6171   - 0s - loss: 1.9701e-04 - mean_absolute_error: 0.0066 -
      val_loss: 32.1542 - val_mean_absolute_error: 3.6114
6172  epoch_end_callback epoch 8232 lr 1.5625e-05
6173  Epoch 8234/10000
6174   - 0s - loss: 2.6566e-04 - mean_absolute_error: 0.0078 -
      val_loss: 32.1399 - val_mean_absolute_error: 3.6132
6175  epoch_end_callback epoch 8233 lr 1.5625e-05
6176  Epoch 8235/10000
6177   - 0s - loss: 2.2864e-04 - mean_absolute_error: 0.0075 -
      val_loss: 32.1392 - val_mean_absolute_error: 3.6110
6178  epoch_end_callback epoch 8234 lr 1.5625e-05
6179  Epoch 8236/10000
6180   - 0s - loss: 2.7321e-04 - mean_absolute_error: 0.0070 -
      val_loss: 32.1420 - val_mean_absolute_error: 3.6119
6181  epoch_end_callback epoch 8235 lr 1.5625e-05
6182  Epoch 8237/10000
6183   - 0s - loss: 2.4686e-04 - mean_absolute_error: 0.0077 -
      val_loss: 32.1075 - val_mean_absolute_error: 3.6110
6184  epoch_end_callback epoch 8236 lr 1.5625e-05
6185  Epoch 8238/10000
6186   - 0s - loss: 2.6891e-04 - mean_absolute_error: 0.0080 -
      val_loss: 32.1229 - val_mean_absolute_error: 3.6102
6187  epoch_end_callback epoch 8237 lr 1.5625e-05
6188  Epoch 8239/10000
6189   - 0s - loss: 2.6230e-04 - mean_absolute_error: 0.0075 -
      val_loss: 32.1355 - val_mean_absolute_error: 3.6110
6190  epoch_end_callback epoch 8238 lr 1.5625e-05
6191  Epoch 8240/10000
6192   - 0s - loss: 2.5280e-04 - mean_absolute_error: 0.0078 -
      val_loss: 32.1084 - val_mean_absolute_error: 3.6109
6193
6194  Epoch 08240: saving model to ./model/
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6194  model_Epoch8240_val_mean_absolute_error3.611.h5
6195  epoch_end_callback epoch 8239 lr 1.5625e-05
6196  Epoch 8241/10000
6197   - 0s - loss: 2.2106e-04 - mean_absolute_error: 0.0074 -
      val_loss: 32.1356 - val_mean_absolute_error: 3.6097
6198  epoch_end_callback epoch 8240 lr 1.5625e-05
6199  Epoch 8242/10000
6200   - 0s - loss: 2.8164e-04 - mean_absolute_error: 0.0085 -
      val_loss: 32.1392 - val_mean_absolute_error: 3.6112
6201  epoch_end_callback epoch 8241 lr 1.5625e-05
6202  Epoch 8243/10000
6203   - 0s - loss: 2.3896e-04 - mean_absolute_error: 0.0069 -
      val_loss: 32.1436 - val_mean_absolute_error: 3.6117
6204  epoch_end_callback epoch 8242 lr 1.5625e-05
6205  Epoch 8244/10000
6206   - 0s - loss: 2.6219e-04 - mean_absolute_error: 0.0080 -
      val_loss: 32.1669 - val_mean_absolute_error: 3.6141
6207  epoch_end_callback epoch 8243 lr 1.5625e-05
6208  Epoch 8245/10000
6209   - 0s - loss: 2.7610e-04 - mean_absolute_error: 0.0076 -
      val_loss: 32.1290 - val_mean_absolute_error: 3.6118
6210  epoch_end_callback epoch 8244 lr 1.5625e-05
6211  Epoch 8246/10000
6212   - 0s - loss: 2.4629e-04 - mean_absolute_error: 0.0070 -
      val_loss: 32.1453 - val_mean_absolute_error: 3.6129
6213  epoch_end_callback epoch 8245 lr 1.5625e-05
6214  Epoch 8247/10000
6215   - 0s - loss: 2.5204e-04 - mean_absolute_error: 0.0076 -
      val_loss: 32.1475 - val_mean_absolute_error: 3.6131
6216  epoch_end_callback epoch 8246 lr 1.5625e-05
6217  Epoch 8248/10000
6218   - 0s - loss: 2.7715e-04 - mean_absolute_error: 0.0092 -
      val_loss: 32.1333 - val_mean_absolute_error: 3.6134
6219  epoch_end_callback epoch 8247 lr 1.5625e-05
6220  Epoch 8249/10000
6221   - 0s - loss: 2.2573e-04 - mean_absolute_error: 0.0077 -
      val_loss: 32.1251 - val_mean_absolute_error: 3.6103
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6222 epoch_end_callback epoch 8248 lr 1.5625e-05
6223 Epoch 8250/10000
6224  - 0s - loss: 2.5834e-04 - mean_absolute_error: 0.0080 -
     val_loss: 32.1321 - val_mean_absolute_error: 3.6134
6225
6226 Epoch 08250: saving model to ./model/
     model_Epoch8250_val_mean_absolute_error3.613.h5
6227 epoch_end_callback epoch 8249 lr 1.5625e-05
6228 Epoch 8251/10000
6229  - 0s - loss: 2.4728e-04 - mean_absolute_error: 0.0077 -
     val_loss: 32.1295 - val_mean_absolute_error: 3.6122
6230 epoch_end_callback epoch 8250 lr 1.5625e-05
6231 Epoch 8252/10000
6232  - 0s - loss: 2.5475e-04 - mean_absolute_error: 0.0081 -
     val_loss: 32.1120 - val_mean_absolute_error: 3.6100
6233 epoch_end_callback epoch 8251 lr 1.5625e-05
6234 Epoch 8253/10000
6235  - 0s - loss: 2.1711e-04 - mean_absolute_error: 0.0077 -
     val_loss: 32.1413 - val_mean_absolute_error: 3.6137
6236 epoch_end_callback epoch 8252 lr 1.5625e-05
6237 Epoch 8254/10000
6238  - 0s - loss: 2.5125e-04 - mean_absolute_error: 0.0073 -
     val_loss: 32.1633 - val_mean_absolute_error: 3.6135
6239 epoch_end_callback epoch 8253 lr 1.5625e-05
6240 Epoch 8255/10000
6241  - 0s - loss: 2.7881e-04 - mean_absolute_error: 0.0077 -
     val_loss: 32.1321 - val_mean_absolute_error: 3.6139
6242 epoch_end_callback epoch 8254 lr 1.5625e-05
6243 Epoch 8256/10000
6244  - 0s - loss: 2.6612e-04 - mean_absolute_error: 0.0078 -
     val_loss: 32.1458 - val_mean_absolute_error: 3.6121
6245 epoch_end_callback epoch 8255 lr 1.5625e-05
6246 Epoch 8257/10000
6247  - 0s - loss: 2.9534e-04 - mean_absolute_error: 0.0083 -
     val_loss: 32.1414 - val_mean_absolute_error: 3.6128
6248 epoch_end_callback epoch 8256 lr 1.5625e-05
6249 Epoch 8258/10000
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6250    - 0s - loss: 2.5390e-04 - mean_absolute_error: 0.0059 -
        val_loss: 32.1321 - val_mean_absolute_error: 3.6117
6251    epoch_end_callback epoch 8257 lr 1.5625e-05
6252    Epoch 8259/10000
6253    - 0s - loss: 2.5823e-04 - mean_absolute_error: 0.0083 -
        val_loss: 32.1286 - val_mean_absolute_error: 3.6110
6254    epoch_end_callback epoch 8258 lr 1.5625e-05
6255    Epoch 8260/10000
6256    - 0s - loss: 2.6007e-04 - mean_absolute_error: 0.0079 -
        val_loss: 32.1341 - val_mean_absolute_error: 3.6127
6257
6258    Epoch 08260: saving model to ./model/
        model_Epoch8260_val_mean_absolute_error3.613.h5
6259    epoch_end_callback epoch 8259 lr 1.5625e-05
6260    Epoch 8261/10000
6261    - 0s - loss: 2.4314e-04 - mean_absolute_error: 0.0070 -
        val_loss: 32.1332 - val_mean_absolute_error: 3.6115
6262    epoch_end_callback epoch 8260 lr 1.5625e-05
6263    Epoch 8262/10000
6264    - 0s - loss: 2.8049e-04 - mean_absolute_error: 0.0082 -
        val_loss: 32.1485 - val_mean_absolute_error: 3.6122
6265    epoch_end_callback epoch 8261 lr 1.5625e-05
6266    Epoch 8263/10000
6267    - 0s - loss: 2.3942e-04 - mean_absolute_error: 0.0072 -
        val_loss: 32.1443 - val_mean_absolute_error: 3.6109
6268    epoch_end_callback epoch 8262 lr 1.5625e-05
6269    Epoch 8264/10000
6270    - 0s - loss: 2.5337e-04 - mean_absolute_error: 0.0073 -
        val_loss: 32.1325 - val_mean_absolute_error: 3.6118
6271    epoch_end_callback epoch 8263 lr 1.5625e-05
6272    Epoch 8265/10000
6273    - 0s - loss: 2.3555e-04 - mean_absolute_error: 0.0069 -
        val_loss: 32.1341 - val_mean_absolute_error: 3.6125
6274    epoch_end_callback epoch 8264 lr 1.5625e-05
6275    Epoch 8266/10000
6276    - 0s - loss: 2.5444e-04 - mean_absolute_error: 0.0075 -
        val_loss: 32.1498 - val_mean_absolute_error: 3.6130
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6277  epoch_end_callback epoch 8265 lr 1.5625e-05
6278  Epoch 8267/10000
6279   - 0s - loss: 2.4609e-04 - mean_absolute_error: 0.0073 -
       val_loss: 32.1279 - val_mean_absolute_error: 3.6114
6280  epoch_end_callback epoch 8266 lr 1.5625e-05
6281  Epoch 8268/10000
6282   - 0s - loss: 2.6507e-04 - mean_absolute_error: 0.0080 -
       val_loss: 32.1133 - val_mean_absolute_error: 3.6111
6283  epoch_end_callback epoch 8267 lr 1.5625e-05
6284  Epoch 8269/10000
6285   - 0s - loss: 2.5541e-04 - mean_absolute_error: 0.0085 -
       val_loss: 32.1135 - val_mean_absolute_error: 3.6118
6286  epoch_end_callback epoch 8268 lr 1.5625e-05
6287  Epoch 8270/10000
6288   - 0s - loss: 2.5168e-04 - mean_absolute_error: 0.0070 -
       val_loss: 32.1365 - val_mean_absolute_error: 3.6129
6289
6290  Epoch 08270: saving model to ./model/
       model_Epoch8270_val_mean_absolute_error3.613.h5
6291  epoch_end_callback epoch 8269 lr 1.5625e-05
6292  Epoch 8271/10000
6293   - 0s - loss: 2.7824e-04 - mean_absolute_error: 0.0072 -
       val_loss: 32.1387 - val_mean_absolute_error: 3.6111
6294  epoch_end_callback epoch 8270 lr 1.5625e-05
6295  Epoch 8272/10000
6296   - 0s - loss: 2.7281e-04 - mean_absolute_error: 0.0083 -
       val_loss: 32.1145 - val_mean_absolute_error: 3.6102
6297  epoch_end_callback epoch 8271 lr 1.5625e-05
6298  Epoch 8273/10000
6299   - 0s - loss: 2.4709e-04 - mean_absolute_error: 0.0071 -
       val_loss: 32.1243 - val_mean_absolute_error: 3.6116
6300  epoch_end_callback epoch 8272 lr 1.5625e-05
6301  Epoch 8274/10000
6302   - 0s - loss: 2.5906e-04 - mean_absolute_error: 0.0078 -
       val_loss: 32.1358 - val_mean_absolute_error: 3.6123
6303  epoch_end_callback epoch 8273 lr 1.5625e-05
6304  Epoch 8275/10000
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6305   - 0s - loss: 2.6778e-04 - mean_absolute_error: 0.0078 -
       val_loss: 32.1243 - val_mean_absolute_error: 3.6127
6306  epoch_end_callback epoch 8274 lr 1.5625e-05
6307  Epoch 8276/10000
6308   - 0s - loss: 2.6909e-04 - mean_absolute_error: 0.0079 -
       val_loss: 32.1238 - val_mean_absolute_error: 3.6119
6309  epoch_end_callback epoch 8275 lr 1.5625e-05
6310  Epoch 8277/10000
6311   - 0s - loss: 2.2344e-04 - mean_absolute_error: 0.0073 -
       val_loss: 32.1190 - val_mean_absolute_error: 3.6118
6312  epoch_end_callback epoch 8276 lr 1.5625e-05
6313  Epoch 8278/10000
6314   - 0s - loss: 2.5870e-04 - mean_absolute_error: 0.0075 -
       val_loss: 32.1267 - val_mean_absolute_error: 3.6121
6315  epoch_end_callback epoch 8277 lr 1.5625e-05
6316  Epoch 8279/10000
6317   - 0s - loss: 2.4988e-04 - mean_absolute_error: 0.0077 -
       val_loss: 32.1533 - val_mean_absolute_error: 3.6132
6318  epoch_end_callback epoch 8278 lr 1.5625e-05
6319  Epoch 8280/10000
6320   - 0s - loss: 2.7955e-04 - mean_absolute_error: 0.0076 -
       val_loss: 32.1320 - val_mean_absolute_error: 3.6119
6321
6322  Epoch 08280: saving model to ./model/
       model_Epoch8280_val_mean_absolute_error3.612.h5
6323  epoch_end_callback epoch 8279 lr 1.5625e-05
6324  Epoch 8281/10000
6325   - 0s - loss: 3.0003e-04 - mean_absolute_error: 0.0085 -
       val_loss: 32.1213 - val_mean_absolute_error: 3.6122
6326  epoch_end_callback epoch 8280 lr 1.5625e-05
6327  Epoch 8282/10000
6328   - 0s - loss: 2.2277e-04 - mean_absolute_error: 0.0068 -
       val_loss: 32.1244 - val_mean_absolute_error: 3.6122
6329  epoch_end_callback epoch 8281 lr 1.5625e-05
6330  Epoch 8283/10000
6331   - 0s - loss: 2.5391e-04 - mean_absolute_error: 0.0073 -
       val_loss: 32.1250 - val_mean_absolute_error: 3.6119
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6332 epoch_end_callback epoch 8282 lr 1.5625e-05
6333 Epoch 8284/10000
6334 - 0s - loss: 2.7206e-04 - mean_absolute_error: 0.0085 - val_loss: 32.1114 - val_mean_absolute_error: 3.6114
6335 epoch_end_callback epoch 8283 lr 1.5625e-05
6336 Epoch 8285/10000
6337 - 0s - loss: 2.5442e-04 - mean_absolute_error: 0.0082 - val_loss: 32.1287 - val_mean_absolute_error: 3.6120
6338 epoch_end_callback epoch 8284 lr 1.5625e-05
6339 Epoch 8286/10000
6340 - 0s - loss: 2.8746e-04 - mean_absolute_error: 0.0083 - val_loss: 32.1342 - val_mean_absolute_error: 3.6132
6341 epoch_end_callback epoch 8285 lr 1.5625e-05
6342 Epoch 8287/10000
6343 - 0s - loss: 2.3749e-04 - mean_absolute_error: 0.0071 - val_loss: 32.1239 - val_mean_absolute_error: 3.6123
6344 epoch_end_callback epoch 8286 lr 1.5625e-05
6345 Epoch 8288/10000
6346 - 0s - loss: 2.2989e-04 - mean_absolute_error: 0.0070 - val_loss: 32.1201 - val_mean_absolute_error: 3.6111
6347 epoch_end_callback epoch 8287 lr 1.5625e-05
6348 Epoch 8289/10000
6349 - 0s - loss: 2.5729e-04 - mean_absolute_error: 0.0085 - val_loss: 32.1187 - val_mean_absolute_error: 3.6121
6350 epoch_end_callback epoch 8288 lr 1.5625e-05
6351 Epoch 8290/10000
6352 - 0s - loss: 2.9229e-04 - mean_absolute_error: 0.0075 - val_loss: 32.1340 - val_mean_absolute_error: 3.6142
6353
6354 Epoch 08290: saving model to ./model/ model_Epoch8290_val_mean_absolute_error3.614.h5
6355 epoch_end_callback epoch 8289 lr 1.5625e-05
6356 Epoch 8291/10000
6357 - 0s - loss: 2.3680e-04 - mean_absolute_error: 0.0066 - val_loss: 32.1394 - val_mean_absolute_error: 3.6125
6358 epoch_end_callback epoch 8290 lr 1.5625e-05
6359 Epoch 8292/10000

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6360    - 0s - loss: 2.4671e-04 - mean_absolute_error: 0.0066 -
        val_loss: 32.1173 - val_mean_absolute_error: 3.6128
6361  epoch_end_callback epoch 8291 lr 1.5625e-05
6362  Epoch 8293/10000
6363    - 0s - loss: 2.7592e-04 - mean_absolute_error: 0.0086 -
        val_loss: 32.1258 - val_mean_absolute_error: 3.6107
6364  epoch_end_callback epoch 8292 lr 1.5625e-05
6365  Epoch 8294/10000
6366    - 0s - loss: 2.5995e-04 - mean_absolute_error: 0.0081 -
        val_loss: 32.1432 - val_mean_absolute_error: 3.6125
6367  epoch_end_callback epoch 8293 lr 1.5625e-05
6368  Epoch 8295/10000
6369    - 0s - loss: 2.1393e-04 - mean_absolute_error: 0.0066 -
        val_loss: 32.1243 - val_mean_absolute_error: 3.6105
6370  epoch_end_callback epoch 8294 lr 1.5625e-05
6371  Epoch 8296/10000
6372    - 0s - loss: 2.3978e-04 - mean_absolute_error: 0.0073 -
        val_loss: 32.1516 - val_mean_absolute_error: 3.6111
6373  epoch_end_callback epoch 8295 lr 1.5625e-05
6374  Epoch 8297/10000
6375    - 0s - loss: 2.9638e-04 - mean_absolute_error: 0.0078 -
        val_loss: 32.1358 - val_mean_absolute_error: 3.6121
6376  epoch_end_callback epoch 8296 lr 1.5625e-05
6377  Epoch 8298/10000
6378    - 0s - loss: 2.4493e-04 - mean_absolute_error: 0.0074 -
        val_loss: 32.1243 - val_mean_absolute_error: 3.6115
6379  epoch_end_callback epoch 8297 lr 1.5625e-05
6380  Epoch 8299/10000
6381    - 0s - loss: 2.4390e-04 - mean_absolute_error: 0.0072 -
        val_loss: 32.1271 - val_mean_absolute_error: 3.6092
6382  epoch_end_callback epoch 8298 lr 1.5625e-05
6383  Epoch 8300/10000
6384    - 0s - loss: 2.6215e-04 - mean_absolute_error: 0.0072 -
        val_loss: 32.1131 - val_mean_absolute_error: 3.6111
6385
6386  Epoch 08300: saving model to ./model/
        model_Epoch8300_val_mean_absolute_error3.611.h5
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6387  epoch_end_callback epoch 8299 lr 1.5625e-05
6388  Epoch 8301/10000
6389   - 0s - loss: 2.6813e-04 - mean_absolute_error: 0.0070 -
      val_loss: 32.1212 - val_mean_absolute_error: 3.6123
6390  epoch_end_callback epoch 8300 lr 1.5625e-05
6391  Epoch 8302/10000
6392   - 0s - loss: 2.4970e-04 - mean_absolute_error: 0.0064 -
      val_loss: 32.1016 - val_mean_absolute_error: 3.6099
6393  epoch_end_callback epoch 8301 lr 1.5625e-05
6394  Epoch 8303/10000
6395   - 0s - loss: 2.8831e-04 - mean_absolute_error: 0.0085 -
      val_loss: 32.1236 - val_mean_absolute_error: 3.6104
6396  epoch_end_callback epoch 8302 lr 1.5625e-05
6397  Epoch 8304/10000
6398   - 0s - loss: 2.3621e-04 - mean_absolute_error: 0.0067 -
      val_loss: 32.1257 - val_mean_absolute_error: 3.6123
6399  epoch_end_callback epoch 8303 lr 1.5625e-05
6400  Epoch 8305/10000
6401   - 0s - loss: 2.0219e-04 - mean_absolute_error: 0.0071 -
      val_loss: 32.1041 - val_mean_absolute_error: 3.6124
6402  epoch_end_callback epoch 8304 lr 1.5625e-05
6403  Epoch 8306/10000
6404   - 0s - loss: 2.7530e-04 - mean_absolute_error: 0.0085 -
      val_loss: 32.1669 - val_mean_absolute_error: 3.6126
6405  epoch_end_callback epoch 8305 lr 1.5625e-05
6406  Epoch 8307/10000
6407   - 0s - loss: 2.4897e-04 - mean_absolute_error: 0.0081 -
      val_loss: 32.1282 - val_mean_absolute_error: 3.6113
6408  epoch_end_callback epoch 8306 lr 1.5625e-05
6409  Epoch 8308/10000
6410   - 0s - loss: 2.7162e-04 - mean_absolute_error: 0.0076 -
      val_loss: 32.1349 - val_mean_absolute_error: 3.6129
6411  epoch_end_callback epoch 8307 lr 1.5625e-05
6412  Epoch 8309/10000
6413   - 0s - loss: 2.1415e-04 - mean_absolute_error: 0.0072 -
      val_loss: 32.1601 - val_mean_absolute_error: 3.6115
6414  epoch_end_callback epoch 8308 lr 1.5625e-05
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6415 Epoch 8310/10000
6416  - 0s - loss: 2.4579e-04 - mean_absolute_error: 0.0068 -
     val_loss: 32.1295 - val_mean_absolute_error: 3.6100
6417
6418 Epoch 08310: saving model to ./model/
     model_Epoch8310_val_mean_absolute_error3.610.h5
6419 epoch_end_callback epoch 8309 lr 1.5625e-05
6420 Epoch 8311/10000
6421  - 0s - loss: 2.4876e-04 - mean_absolute_error: 0.0076 -
     val_loss: 32.1194 - val_mean_absolute_error: 3.6118
6422 epoch_end_callback epoch 8310 lr 1.5625e-05
6423 Epoch 8312/10000
6424  - 0s - loss: 3.1169e-04 - mean_absolute_error: 0.0073 -
     val_loss: 32.1124 - val_mean_absolute_error: 3.6098
6425 epoch_end_callback epoch 8311 lr 1.5625e-05
6426 Epoch 8313/10000
6427  - 0s - loss: 1.8189e-04 - mean_absolute_error: 0.0057 -
     val_loss: 32.1107 - val_mean_absolute_error: 3.6123
6428 epoch_end_callback epoch 8312 lr 1.5625e-05
6429 Epoch 8314/10000
6430  - 0s - loss: 3.2234e-04 - mean_absolute_error: 0.0083 -
     val_loss: 32.0901 - val_mean_absolute_error: 3.6105
6431 epoch_end_callback epoch 8313 lr 1.5625e-05
6432 Epoch 8315/10000
6433  - 0s - loss: 2.3604e-04 - mean_absolute_error: 0.0072 -
     val_loss: 32.1379 - val_mean_absolute_error: 3.6111
6434 epoch_end_callback epoch 8314 lr 1.5625e-05
6435 Epoch 8316/10000
6436  - 0s - loss: 2.6774e-04 - mean_absolute_error: 0.0081 -
     val_loss: 32.1021 - val_mean_absolute_error: 3.6120
6437 epoch_end_callback epoch 8315 lr 1.5625e-05
6438 Epoch 8317/10000
6439  - 0s - loss: 2.2187e-04 - mean_absolute_error: 0.0071 -
     val_loss: 32.1045 - val_mean_absolute_error: 3.6116
6440 epoch_end_callback epoch 8316 lr 1.5625e-05
6441 Epoch 8318/10000
6442  - 0s - loss: 2.7234e-04 - mean_absolute_error: 0.0080 -
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6442 val_loss: 32.1207 - val_mean_absolute_error: 3.6094
6443 epoch_end_callback epoch 8317 lr 1.5625e-05
6444 Epoch 8319/10000
6445   - 0s - loss: 2.9861e-04 - mean_absolute_error: 0.0076 - val_loss: 32.1360 - val_mean_absolute_error: 3.6110
6446 epoch_end_callback epoch 8318 lr 1.5625e-05
6447 Epoch 8320/10000
6448   - 0s - loss: 2.2259e-04 - mean_absolute_error: 0.0065 - val_loss: 32.1196 - val_mean_absolute_error: 3.6105
6449
6450 Epoch 08320: saving model to ./model/model_Epoch8320_val_mean_absolute_error3.610.h5
6451 epoch_end_callback epoch 8319 lr 1.5625e-05
6452 Epoch 8321/10000
6453   - 0s - loss: 2.3792e-04 - mean_absolute_error: 0.0072 - val_loss: 32.1372 - val_mean_absolute_error: 3.6115
6454 epoch_end_callback epoch 8320 lr 1.5625e-05
6455 Epoch 8322/10000
6456   - 0s - loss: 2.5559e-04 - mean_absolute_error: 0.0079 - val_loss: 32.1375 - val_mean_absolute_error: 3.6129
6457 epoch_end_callback epoch 8321 lr 1.5625e-05
6458 Epoch 8323/10000
6459   - 0s - loss: 2.5111e-04 - mean_absolute_error: 0.0074 - val_loss: 32.1318 - val_mean_absolute_error: 3.6115
6460 epoch_end_callback epoch 8322 lr 1.5625e-05
6461 Epoch 8324/10000
6462   - 0s - loss: 2.5889e-04 - mean_absolute_error: 0.0081 - val_loss: 32.1511 - val_mean_absolute_error: 3.6124
6463 epoch_end_callback epoch 8323 lr 1.5625e-05
6464 Epoch 8325/10000
6465   - 0s - loss: 2.5171e-04 - mean_absolute_error: 0.0073 - val_loss: 32.1461 - val_mean_absolute_error: 3.6112
6466 epoch_end_callback epoch 8324 lr 1.5625e-05
6467 Epoch 8326/10000
6468   - 0s - loss: 2.4330e-04 - mean_absolute_error: 0.0070 - val_loss: 32.1437 - val_mean_absolute_error: 3.6130
6469 epoch_end_callback epoch 8325 lr 1.5625e-05

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6470  Epoch 8327/10000
6471   - 0s - loss: 2.3663e-04 - mean_absolute_error: 0.0076 -
       val_loss: 32.1271 - val_mean_absolute_error: 3.6119
6472  epoch_end_callback epoch 8326 lr 1.5625e-05
6473  Epoch 8328/10000
6474   - 0s - loss: 2.8973e-04 - mean_absolute_error: 0.0080 -
       val_loss: 32.1231 - val_mean_absolute_error: 3.6112
6475  epoch_end_callback epoch 8327 lr 1.5625e-05
6476  Epoch 8329/10000
6477   - 0s - loss: 2.5663e-04 - mean_absolute_error: 0.0068 -
       val_loss: 32.1352 - val_mean_absolute_error: 3.6121
6478  epoch_end_callback epoch 8328 lr 1.5625e-05
6479  Epoch 8330/10000
6480   - 0s - loss: 2.8865e-04 - mean_absolute_error: 0.0084 -
       val_loss: 32.1278 - val_mean_absolute_error: 3.6113
6481
6482  Epoch 08330: saving model to ./model/
       model_Epoch8330_val_mean_absolute_error3.611.h5
6483  epoch_end_callback epoch 8329 lr 1.5625e-05
6484  Epoch 8331/10000
6485   - 0s - loss: 2.2405e-04 - mean_absolute_error: 0.0062 -
       val_loss: 32.1766 - val_mean_absolute_error: 3.6133
6486  epoch_end_callback epoch 8330 lr 1.5625e-05
6487  Epoch 8332/10000
6488   - 0s - loss: 2.6321e-04 - mean_absolute_error: 0.0074 -
       val_loss: 32.1355 - val_mean_absolute_error: 3.6121
6489  epoch_end_callback epoch 8331 lr 1.5625e-05
6490  Epoch 8333/10000
6491   - 0s - loss: 2.4293e-04 - mean_absolute_error: 0.0066 -
       val_loss: 32.1241 - val_mean_absolute_error: 3.6112
6492  epoch_end_callback epoch 8332 lr 1.5625e-05
6493  Epoch 8334/10000
6494   - 0s - loss: 2.7240e-04 - mean_absolute_error: 0.0084 -
       val_loss: 32.1269 - val_mean_absolute_error: 3.6122
6495  epoch_end_callback epoch 8333 lr 1.5625e-05
6496  Epoch 8335/10000
6497   - 0s - loss: 2.3759e-04 - mean_absolute_error: 0.0075 -
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6497  val_loss: 32.0980 - val_mean_absolute_error: 3.6099
6498  epoch_end_callback epoch 8334 lr 1.5625e-05
6499  Epoch 8336/10000
6500   - 0s - loss: 2.6788e-04 - mean_absolute_error: 0.0079 -
      val_loss: 32.1466 - val_mean_absolute_error: 3.6119
6501  epoch_end_callback epoch 8335 lr 1.5625e-05
6502  Epoch 8337/10000
6503   - 0s - loss: 1.9730e-04 - mean_absolute_error: 0.0054 -
      val_loss: 32.1286 - val_mean_absolute_error: 3.6116
6504  epoch_end_callback epoch 8336 lr 7.8125e-06
6505  Epoch 8338/10000
6506   - 0s - loss: 1.8837e-04 - mean_absolute_error: 0.0048 -
      val_loss: 32.1285 - val_mean_absolute_error: 3.6114
6507  epoch_end_callback epoch 8337 lr 7.8125e-06
6508  Epoch 8339/10000
6509   - 0s - loss: 1.9322e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1349 - val_mean_absolute_error: 3.6119
6510  epoch_end_callback epoch 8338 lr 7.8125e-06
6511  Epoch 8340/10000
6512   - 0s - loss: 1.9434e-04 - mean_absolute_error: 0.0049 -
      val_loss: 32.1452 - val_mean_absolute_error: 3.6122
6513
6514  Epoch 08340: saving model to ./model/
      model_Epoch8340_val_mean_absolute_error3.612.h5
6515  epoch_end_callback epoch 8339 lr 7.8125e-06
6516  Epoch 8341/10000
6517   - 0s - loss: 1.8278e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1211 - val_mean_absolute_error: 3.6122
6518  epoch_end_callback epoch 8340 lr 7.8125e-06
6519  Epoch 8342/10000
6520   - 0s - loss: 1.8800e-04 - mean_absolute_error: 0.0049 -
      val_loss: 32.1421 - val_mean_absolute_error: 3.6123
6521  epoch_end_callback epoch 8341 lr 7.8125e-06
6522  Epoch 8343/10000
6523   - 0s - loss: 1.9017e-04 - mean_absolute_error: 0.0047 -
      val_loss: 32.1157 - val_mean_absolute_error: 3.6106
6524  epoch_end_callback epoch 8342 lr 7.8125e-06
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6525  Epoch 8344/10000
6526   - 0s - loss: 1.9039e-04 - mean_absolute_error: 0.0048 -
      val_loss: 32.1181 - val_mean_absolute_error: 3.6112
6527  epoch_end_callback epoch 8343 lr 7.8125e-06
6528  Epoch 8345/10000
6529   - 0s - loss: 1.6860e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1282 - val_mean_absolute_error: 3.6115
6530  epoch_end_callback epoch 8344 lr 7.8125e-06
6531  Epoch 8346/10000
6532   - 0s - loss: 2.0064e-04 - mean_absolute_error: 0.0046 -
      val_loss: 32.1258 - val_mean_absolute_error: 3.6114
6533  epoch_end_callback epoch 8345 lr 7.8125e-06
6534  Epoch 8347/10000
6535   - 0s - loss: 1.7924e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1196 - val_mean_absolute_error: 3.6104
6536  epoch_end_callback epoch 8346 lr 7.8125e-06
6537  Epoch 8348/10000
6538   - 0s - loss: 1.8977e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1310 - val_mean_absolute_error: 3.6117
6539  epoch_end_callback epoch 8347 lr 7.8125e-06
6540  Epoch 8349/10000
6541   - 0s - loss: 1.8114e-04 - mean_absolute_error: 0.0049 -
      val_loss: 32.1220 - val_mean_absolute_error: 3.6106
6542  epoch_end_callback epoch 8348 lr 7.8125e-06
6543  Epoch 8350/10000
6544   - 0s - loss: 1.8144e-04 - mean_absolute_error: 0.0040 -
      val_loss: 32.1354 - val_mean_absolute_error: 3.6118
6545
6546  Epoch 08350: saving model to ./model/
      model_Epoch8350_val_mean_absolute_error3.612.h5
6547  epoch_end_callback epoch 8349 lr 7.8125e-06
6548  Epoch 8351/10000
6549   - 0s - loss: 1.7845e-04 - mean_absolute_error: 0.0046 -
      val_loss: 32.1257 - val_mean_absolute_error: 3.6115
6550  epoch_end_callback epoch 8350 lr 7.8125e-06
6551  Epoch 8352/10000
6552   - 0s - loss: 1.9277e-04 - mean_absolute_error: 0.0048 -
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6552  val_loss: 32.1287 - val_mean_absolute_error: 3.6114
6553  epoch_end_callback epoch 8351 lr 7.8125e-06
6554  Epoch 8353/10000
6555   - 0s - loss: 1.5811e-04 - mean_absolute_error: 0.0040 -
      val_loss: 32.1244 - val_mean_absolute_error: 3.6114
6556  epoch_end_callback epoch 8352 lr 7.8125e-06
6557  Epoch 8354/10000
6558   - 0s - loss: 2.0028e-04 - mean_absolute_error: 0.0049 -
      val_loss: 32.1245 - val_mean_absolute_error: 3.6119
6559  epoch_end_callback epoch 8353 lr 7.8125e-06
6560  Epoch 8355/10000
6561   - 0s - loss: 1.9423e-04 - mean_absolute_error: 0.0040 -
      val_loss: 32.1318 - val_mean_absolute_error: 3.6122
6562  epoch_end_callback epoch 8354 lr 7.8125e-06
6563  Epoch 8356/10000
6564   - 0s - loss: 1.8790e-04 - mean_absolute_error: 0.0041 -
      val_loss: 32.1235 - val_mean_absolute_error: 3.6097
6565  epoch_end_callback epoch 8355 lr 7.8125e-06
6566  Epoch 8357/10000
6567   - 0s - loss: 1.8683e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1369 - val_mean_absolute_error: 3.6114
6568  epoch_end_callback epoch 8356 lr 7.8125e-06
6569  Epoch 8358/10000
6570   - 0s - loss: 1.8627e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1314 - val_mean_absolute_error: 3.6108
6571  epoch_end_callback epoch 8357 lr 7.8125e-06
6572  Epoch 8359/10000
6573   - 0s - loss: 1.8962e-04 - mean_absolute_error: 0.0047 -
      val_loss: 32.1260 - val_mean_absolute_error: 3.6108
6574  epoch_end_callback epoch 8358 lr 7.8125e-06
6575  Epoch 8360/10000
6576   - 0s - loss: 1.6020e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1143 - val_mean_absolute_error: 3.6114
6577
6578  Epoch 08360: saving model to ./model/
      model_Epoch8360_val_mean_absolute_error3.611.h5
6579  epoch_end_callback epoch 8359 lr 7.8125e-06
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6580  Epoch 8361/10000
6581   - 0s - loss: 1.8692e-04 - mean_absolute_error: 0.0049 -
      val_loss: 32.1182 - val_mean_absolute_error: 3.6109
6582  epoch_end_callback epoch 8360 lr 7.8125e-06
6583  Epoch 8362/10000
6584   - 0s - loss: 1.9273e-04 - mean_absolute_error: 0.0047 -
      val_loss: 32.1262 - val_mean_absolute_error: 3.6109
6585  epoch_end_callback epoch 8361 lr 7.8125e-06
6586  Epoch 8363/10000
6587   - 0s - loss: 1.8360e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1308 - val_mean_absolute_error: 3.6116
6588  epoch_end_callback epoch 8362 lr 7.8125e-06
6589  Epoch 8364/10000
6590   - 0s - loss: 1.8406e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1266 - val_mean_absolute_error: 3.6112
6591  epoch_end_callback epoch 8363 lr 7.8125e-06
6592  Epoch 8365/10000
6593   - 0s - loss: 1.9123e-04 - mean_absolute_error: 0.0047 -
      val_loss: 32.1280 - val_mean_absolute_error: 3.6115
6594  epoch_end_callback epoch 8364 lr 7.8125e-06
6595  Epoch 8366/10000
6596   - 0s - loss: 1.8625e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1357 - val_mean_absolute_error: 3.6110
6597  epoch_end_callback epoch 8365 lr 7.8125e-06
6598  Epoch 8367/10000
6599   - 0s - loss: 1.8930e-04 - mean_absolute_error: 0.0048 -
      val_loss: 32.1380 - val_mean_absolute_error: 3.6119
6600  epoch_end_callback epoch 8366 lr 7.8125e-06
6601  Epoch 8368/10000
6602   - 0s - loss: 1.8189e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1332 - val_mean_absolute_error: 3.6114
6603  epoch_end_callback epoch 8367 lr 7.8125e-06
6604  Epoch 8369/10000
6605   - 0s - loss: 1.8820e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1346 - val_mean_absolute_error: 3.6113
6606  epoch_end_callback epoch 8368 lr 7.8125e-06
6607  Epoch 8370/10000
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6608    - 0s - loss: 1.7863e-04 - mean_absolute_error: 0.0045 -
        val_loss: 32.1316 - val_mean_absolute_error: 3.6120

6609

6610  Epoch 08370: saving model to ./model/
      model_Epoch8370_val_mean_absolute_error3.612.h5

6611  epoch_end_callback epoch 8369 lr 7.8125e-06

6612  Epoch 8371/10000

6613    - 0s - loss: 1.8342e-04 - mean_absolute_error: 0.0043 -
        val_loss: 32.1286 - val_mean_absolute_error: 3.6108

6614  epoch_end_callback epoch 8370 lr 7.8125e-06

6615  Epoch 8372/10000

6616    - 0s - loss: 1.9557e-04 - mean_absolute_error: 0.0053 -
        val_loss: 32.1437 - val_mean_absolute_error: 3.6124

6617  epoch_end_callback epoch 8371 lr 7.8125e-06

6618  Epoch 8373/10000

6619    - 0s - loss: 1.8435e-04 - mean_absolute_error: 0.0045 -
        val_loss: 32.1284 - val_mean_absolute_error: 3.6115

6620  epoch_end_callback epoch 8372 lr 7.8125e-06

6621  Epoch 8374/10000

6622    - 0s - loss: 1.8551e-04 - mean_absolute_error: 0.0042 -
        val_loss: 32.1246 - val_mean_absolute_error: 3.6115

6623  epoch_end_callback epoch 8373 lr 7.8125e-06

6624  Epoch 8375/10000

6625    - 0s - loss: 1.9404e-04 - mean_absolute_error: 0.0050 -
        val_loss: 32.1239 - val_mean_absolute_error: 3.6116

6626  epoch_end_callback epoch 8374 lr 7.8125e-06

6627  Epoch 8376/10000

6628    - 0s - loss: 1.6120e-04 - mean_absolute_error: 0.0040 -
        val_loss: 32.1394 - val_mean_absolute_error: 3.6120

6629  epoch_end_callback epoch 8375 lr 7.8125e-06

6630  Epoch 8377/10000

6631    - 0s - loss: 1.9832e-04 - mean_absolute_error: 0.0044 -
        val_loss: 32.1430 - val_mean_absolute_error: 3.6124

6632  epoch_end_callback epoch 8376 lr 7.8125e-06

6633  Epoch 8378/10000

6634    - 0s - loss: 1.9192e-04 - mean_absolute_error: 0.0044 -
        val_loss: 32.1194 - val_mean_absolute_error: 3.6110
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6635 epoch_end_callback epoch 8377 lr 7.8125e-06
6636 Epoch 8379/10000
6637  - 0s - loss: 1.9005e-04 - mean_absolute_error: 0.0046 -
     val_loss: 32.1228 - val_mean_absolute_error: 3.6106
6638 epoch_end_callback epoch 8378 lr 7.8125e-06
6639 Epoch 8380/10000
6640  - 0s - loss: 1.9140e-04 - mean_absolute_error: 0.0044 -
     val_loss: 32.1247 - val_mean_absolute_error: 3.6107
6641
6642 Epoch 08380: saving model to ./model/
     model_Epoch8380_val_mean_absolute_error3.611.h5
6643 epoch_end_callback epoch 8379 lr 7.8125e-06
6644 Epoch 8381/10000
6645  - 0s - loss: 1.6706e-04 - mean_absolute_error: 0.0040 -
     val_loss: 32.1425 - val_mean_absolute_error: 3.6121
6646 epoch_end_callback epoch 8380 lr 7.8125e-06
6647 Epoch 8382/10000
6648  - 0s - loss: 1.5848e-04 - mean_absolute_error: 0.0042 -
     val_loss: 32.1373 - val_mean_absolute_error: 3.6120
6649 epoch_end_callback epoch 8381 lr 7.8125e-06
6650 Epoch 8383/10000
6651  - 0s - loss: 1.8651e-04 - mean_absolute_error: 0.0046 -
     val_loss: 32.1219 - val_mean_absolute_error: 3.6118
6652 epoch_end_callback epoch 8382 lr 7.8125e-06
6653 Epoch 8384/10000
6654  - 0s - loss: 1.5859e-04 - mean_absolute_error: 0.0043 -
     val_loss: 32.1285 - val_mean_absolute_error: 3.6115
6655 epoch_end_callback epoch 8383 lr 7.8125e-06
6656 Epoch 8385/10000
6657  - 0s - loss: 1.9352e-04 - mean_absolute_error: 0.0048 -
     val_loss: 32.1401 - val_mean_absolute_error: 3.6115
6658 epoch_end_callback epoch 8384 lr 7.8125e-06
6659 Epoch 8386/10000
6660  - 0s - loss: 1.8191e-04 - mean_absolute_error: 0.0048 -
     val_loss: 32.1448 - val_mean_absolute_error: 3.6121
6661 epoch_end_callback epoch 8385 lr 7.8125e-06
6662 Epoch 8387/10000
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6663    - 0s - loss: 1.9323e-04 - mean_absolute_error: 0.0045 -
        val_loss: 32.1397 - val_mean_absolute_error: 3.6115
6664  epoch_end_callback epoch 8386 lr 7.8125e-06
6665  Epoch 8388/10000
6666    - 0s - loss: 1.8575e-04 - mean_absolute_error: 0.0047 -
        val_loss: 32.1344 - val_mean_absolute_error: 3.6115
6667  epoch_end_callback epoch 8387 lr 7.8125e-06
6668  Epoch 8389/10000
6669    - 0s - loss: 1.8332e-04 - mean_absolute_error: 0.0045 -
        val_loss: 32.1333 - val_mean_absolute_error: 3.6114
6670  epoch_end_callback epoch 8388 lr 7.8125e-06
6671  Epoch 8390/10000
6672    - 0s - loss: 1.9221e-04 - mean_absolute_error: 0.0048 -
        val_loss: 32.1206 - val_mean_absolute_error: 3.6114
6673
6674  Epoch 08390: saving model to ./model/
        model_Epoch8390_val_mean_absolute_error3.611.h5
6675  epoch_end_callback epoch 8389 lr 7.8125e-06
6676  Epoch 8391/10000
6677    - 0s - loss: 1.8553e-04 - mean_absolute_error: 0.0046 -
        val_loss: 32.1362 - val_mean_absolute_error: 3.6106
6678  epoch_end_callback epoch 8390 lr 7.8125e-06
6679  Epoch 8392/10000
6680    - 0s - loss: 2.0041e-04 - mean_absolute_error: 0.0045 -
        val_loss: 32.1419 - val_mean_absolute_error: 3.6119
6681  epoch_end_callback epoch 8391 lr 7.8125e-06
6682  Epoch 8393/10000
6683    - 0s - loss: 1.7748e-04 - mean_absolute_error: 0.0038 -
        val_loss: 32.1331 - val_mean_absolute_error: 3.6119
6684  epoch_end_callback epoch 8392 lr 7.8125e-06
6685  Epoch 8394/10000
6686    - 0s - loss: 1.8708e-04 - mean_absolute_error: 0.0045 -
        val_loss: 32.1307 - val_mean_absolute_error: 3.6120
6687  epoch_end_callback epoch 8393 lr 7.8125e-06
6688  Epoch 8395/10000
6689    - 0s - loss: 1.8431e-04 - mean_absolute_error: 0.0044 -
        val_loss: 32.1286 - val_mean_absolute_error: 3.6113
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6690  epoch_end_callback epoch 8394 lr 7.8125e-06
6691  Epoch 8396/10000
6692   - 0s - loss: 1.9197e-04 - mean_absolute_error: 0.0046 -
      val_loss: 32.1446 - val_mean_absolute_error: 3.6114
6693  epoch_end_callback epoch 8395 lr 7.8125e-06
6694  Epoch 8397/10000
6695   - 0s - loss: 1.7881e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1351 - val_mean_absolute_error: 3.6120
6696  epoch_end_callback epoch 8396 lr 7.8125e-06
6697  Epoch 8398/10000
6698   - 0s - loss: 1.5793e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1395 - val_mean_absolute_error: 3.6125
6699  epoch_end_callback epoch 8397 lr 7.8125e-06
6700  Epoch 8399/10000
6701   - 0s - loss: 1.6302e-04 - mean_absolute_error: 0.0046 -
      val_loss: 32.1164 - val_mean_absolute_error: 3.6110
6702  epoch_end_callback epoch 8398 lr 7.8125e-06
6703  Epoch 8400/10000
6704   - 0s - loss: 1.9552e-04 - mean_absolute_error: 0.0051 -
      val_loss: 32.1294 - val_mean_absolute_error: 3.6122
6705
6706  Epoch 08400: saving model to ./model/
      model_Epoch8400_val_mean_absolute_error3.612.h5
6707  epoch_end_callback epoch 8399 lr 7.8125e-06
6708  Epoch 8401/10000
6709   - 0s - loss: 1.7847e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1353 - val_mean_absolute_error: 3.6115
6710  epoch_end_callback epoch 8400 lr 7.8125e-06
6711  Epoch 8402/10000
6712   - 0s - loss: 1.9002e-04 - mean_absolute_error: 0.0051 -
      val_loss: 32.1326 - val_mean_absolute_error: 3.6115
6713  epoch_end_callback epoch 8401 lr 7.8125e-06
6714  Epoch 8403/10000
6715   - 0s - loss: 1.7082e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1270 - val_mean_absolute_error: 3.6115
6716  epoch_end_callback epoch 8402 lr 7.8125e-06
6717  Epoch 8404/10000
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6718    - 0s - loss: 1.8363e-04 - mean_absolute_error: 0.0048 -
        val_loss: 32.1387 - val_mean_absolute_error: 3.6117
6719 epoch_end_callback epoch 8403 lr 7.8125e-06
6720 Epoch 8405/10000
6721    - 0s - loss: 1.8126e-04 - mean_absolute_error: 0.0042 -
        val_loss: 32.1203 - val_mean_absolute_error: 3.6118
6722 epoch_end_callback epoch 8404 lr 7.8125e-06
6723 Epoch 8406/10000
6724    - 0s - loss: 1.8703e-04 - mean_absolute_error: 0.0048 -
        val_loss: 32.1312 - val_mean_absolute_error: 3.6108
6725 epoch_end_callback epoch 8405 lr 7.8125e-06
6726 Epoch 8407/10000
6727    - 0s - loss: 1.8971e-04 - mean_absolute_error: 0.0045 -
        val_loss: 32.1305 - val_mean_absolute_error: 3.6116
6728 epoch_end_callback epoch 8406 lr 7.8125e-06
6729 Epoch 8408/10000
6730    - 0s - loss: 1.7179e-04 - mean_absolute_error: 0.0043 -
        val_loss: 32.1285 - val_mean_absolute_error: 3.6122
6731 epoch_end_callback epoch 8407 lr 7.8125e-06
6732 Epoch 8409/10000
6733    - 0s - loss: 1.5845e-04 - mean_absolute_error: 0.0041 -
        val_loss: 32.1353 - val_mean_absolute_error: 3.6126
6734 epoch_end_callback epoch 8408 lr 7.8125e-06
6735 Epoch 8410/10000
6736    - 0s - loss: 1.9673e-04 - mean_absolute_error: 0.0055 -
        val_loss: 32.1308 - val_mean_absolute_error: 3.6115
6737
6738 Epoch 08410: saving model to ./model/
        model_Epoch8410_val_mean_absolute_error3.612.h5
6739 epoch_end_callback epoch 8409 lr 7.8125e-06
6740 Epoch 8411/10000
6741    - 0s - loss: 1.7782e-04 - mean_absolute_error: 0.0046 -
        val_loss: 32.1292 - val_mean_absolute_error: 3.6114
6742 epoch_end_callback epoch 8410 lr 7.8125e-06
6743 Epoch 8412/10000
6744    - 0s - loss: 1.8183e-04 - mean_absolute_error: 0.0045 -
        val_loss: 32.1318 - val_mean_absolute_error: 3.6123
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6745 epoch_end_callback epoch 8411 lr 7.8125e-06
6746 Epoch 8413/10000
6747 - 0s - loss: 1.8379e-04 - mean_absolute_error: 0.0045 - val_loss: 32.1229 - val_mean_absolute_error: 3.6112
6748 epoch_end_callback epoch 8412 lr 7.8125e-06
6749 Epoch 8414/10000
6750 - 0s - loss: 1.8362e-04 - mean_absolute_error: 0.0047 - val_loss: 32.1215 - val_mean_absolute_error: 3.6111
6751 epoch_end_callback epoch 8413 lr 7.8125e-06
6752 Epoch 8415/10000
6753 - 0s - loss: 1.7237e-04 - mean_absolute_error: 0.0045 - val_loss: 32.1321 - val_mean_absolute_error: 3.6118
6754 epoch_end_callback epoch 8414 lr 7.8125e-06
6755 Epoch 8416/10000
6756 - 0s - loss: 1.8623e-04 - mean_absolute_error: 0.0046 - val_loss: 32.1432 - val_mean_absolute_error: 3.6122
6757 epoch_end_callback epoch 8415 lr 7.8125e-06
6758 Epoch 8417/10000
6759 - 0s - loss: 1.8804e-04 - mean_absolute_error: 0.0050 - val_loss: 32.1344 - val_mean_absolute_error: 3.6114
6760 epoch_end_callback epoch 8416 lr 7.8125e-06
6761 Epoch 8418/10000
6762 - 0s - loss: 1.7617e-04 - mean_absolute_error: 0.0044 - val_loss: 32.1426 - val_mean_absolute_error: 3.6121
6763 epoch_end_callback epoch 8417 lr 7.8125e-06
6764 Epoch 8419/10000
6765 - 0s - loss: 1.8200e-04 - mean_absolute_error: 0.0046 - val_loss: 32.1387 - val_mean_absolute_error: 3.6115
6766 epoch_end_callback epoch 8418 lr 7.8125e-06
6767 Epoch 8420/10000
6768 - 0s - loss: 1.6946e-04 - mean_absolute_error: 0.0044 - val_loss: 32.1727 - val_mean_absolute_error: 3.6130
6769
6770 Epoch 08420: saving model to ./model/model_Epoch8420_val_mean_absolute_error3.613.h5
6771 epoch_end_callback epoch 8419 lr 7.8125e-06
6772 Epoch 8421/10000

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6773    - 0s - loss: 1.8529e-04 - mean_absolute_error: 0.0050 -
        val_loss: 32.1337 - val_mean_absolute_error: 3.6122
6774    epoch_end_callback epoch 8420 lr 7.8125e-06
6775    Epoch 8422/10000
6776    - 0s - loss: 1.7182e-04 - mean_absolute_error: 0.0041 -
        val_loss: 32.1376 - val_mean_absolute_error: 3.6117
6777    epoch_end_callback epoch 8421 lr 7.8125e-06
6778    Epoch 8423/10000
6779    - 0s - loss: 1.7425e-04 - mean_absolute_error: 0.0048 -
        val_loss: 32.1291 - val_mean_absolute_error: 3.6119
6780    epoch_end_callback epoch 8422 lr 7.8125e-06
6781    Epoch 8424/10000
6782    - 0s - loss: 1.7555e-04 - mean_absolute_error: 0.0047 -
        val_loss: 32.1290 - val_mean_absolute_error: 3.6119
6783    epoch_end_callback epoch 8423 lr 7.8125e-06
6784    Epoch 8425/10000
6785    - 0s - loss: 1.8467e-04 - mean_absolute_error: 0.0047 -
        val_loss: 32.1357 - val_mean_absolute_error: 3.6116
6786    epoch_end_callback epoch 8424 lr 7.8125e-06
6787    Epoch 8426/10000
6788    - 0s - loss: 1.7930e-04 - mean_absolute_error: 0.0048 -
        val_loss: 32.1425 - val_mean_absolute_error: 3.6114
6789    epoch_end_callback epoch 8425 lr 7.8125e-06
6790    Epoch 8427/10000
6791    - 0s - loss: 1.8056e-04 - mean_absolute_error: 0.0046 -
        val_loss: 32.1344 - val_mean_absolute_error: 3.6119
6792    epoch_end_callback epoch 8426 lr 7.8125e-06
6793    Epoch 8428/10000
6794    - 0s - loss: 1.8161e-04 - mean_absolute_error: 0.0048 -
        val_loss: 32.1321 - val_mean_absolute_error: 3.6114
6795    epoch_end_callback epoch 8427 lr 7.8125e-06
6796    Epoch 8429/10000
6797    - 0s - loss: 1.7963e-04 - mean_absolute_error: 0.0042 -
        val_loss: 32.1435 - val_mean_absolute_error: 3.6109
6798    epoch_end_callback epoch 8428 lr 7.8125e-06
6799    Epoch 8430/10000
6800    - 0s - loss: 1.8133e-04 - mean_absolute_error: 0.0046 -
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6800  val_loss: 32.1323 - val_mean_absolute_error: 3.6117
6801
6802  Epoch 08430: saving model to ./model/
      model_Epoch8430_val_mean_absolute_error3.612.h5
6803  epoch_end_callback epoch 8429 lr 7.8125e-06
6804  Epoch 8431/10000
6805   - 0s - loss: 1.8364e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1409 - val_mean_absolute_error: 3.6119
6806  epoch_end_callback epoch 8430 lr 7.8125e-06
6807  Epoch 8432/10000
6808   - 0s - loss: 1.7755e-04 - mean_absolute_error: 0.0048 -
      val_loss: 32.1382 - val_mean_absolute_error: 3.6118
6809  epoch_end_callback epoch 8431 lr 7.8125e-06
6810  Epoch 8433/10000
6811   - 0s - loss: 1.5584e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1254 - val_mean_absolute_error: 3.6104
6812  epoch_end_callback epoch 8432 lr 7.8125e-06
6813  Epoch 8434/10000
6814   - 0s - loss: 1.9032e-04 - mean_absolute_error: 0.0052 -
      val_loss: 32.1316 - val_mean_absolute_error: 3.6116
6815  epoch_end_callback epoch 8433 lr 7.8125e-06
6816  Epoch 8435/10000
6817   - 0s - loss: 1.6417e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1280 - val_mean_absolute_error: 3.6118
6818  epoch_end_callback epoch 8434 lr 7.8125e-06
6819  Epoch 8436/10000
6820   - 0s - loss: 1.8584e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1208 - val_mean_absolute_error: 3.6114
6821  epoch_end_callback epoch 8435 lr 7.8125e-06
6822  Epoch 8437/10000
6823   - 0s - loss: 1.7971e-04 - mean_absolute_error: 0.0046 -
      val_loss: 32.1344 - val_mean_absolute_error: 3.6118
6824  epoch_end_callback epoch 8436 lr 7.8125e-06
6825  Epoch 8438/10000
6826   - 0s - loss: 1.8424e-04 - mean_absolute_error: 0.0048 -
      val_loss: 32.1181 - val_mean_absolute_error: 3.6107
6827  epoch_end_callback epoch 8437 lr 7.8125e-06
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6828  Epoch 8439/10000
6829   - 0s - loss: 1.6691e-04 - mean_absolute_error: 0.0044 -
       val_loss: 32.1381 - val_mean_absolute_error: 3.6118
6830  epoch_end_callback epoch 8438 lr 7.8125e-06
6831  Epoch 8440/10000
6832   - 0s - loss: 1.7166e-04 - mean_absolute_error: 0.0040 -
       val_loss: 32.1329 - val_mean_absolute_error: 3.6111
6833
6834  Epoch 08440: saving model to ./model/
       model_Epoch8440_val_mean_absolute_error3.611.h5
6835  epoch_end_callback epoch 8439 lr 7.8125e-06
6836  Epoch 8441/10000
6837   - 0s - loss: 1.7727e-04 - mean_absolute_error: 0.0044 -
       val_loss: 32.1391 - val_mean_absolute_error: 3.6125
6838  epoch_end_callback epoch 8440 lr 7.8125e-06
6839  Epoch 8442/10000
6840   - 0s - loss: 1.7645e-04 - mean_absolute_error: 0.0046 -
       val_loss: 32.1206 - val_mean_absolute_error: 3.6100
6841  epoch_end_callback epoch 8441 lr 7.8125e-06
6842  Epoch 8443/10000
6843   - 0s - loss: 1.9182e-04 - mean_absolute_error: 0.0049 -
       val_loss: 32.1357 - val_mean_absolute_error: 3.6121
6844  epoch_end_callback epoch 8442 lr 7.8125e-06
6845  Epoch 8444/10000
6846   - 0s - loss: 1.8205e-04 - mean_absolute_error: 0.0036 -
       val_loss: 32.1328 - val_mean_absolute_error: 3.6119
6847  epoch_end_callback epoch 8443 lr 7.8125e-06
6848  Epoch 8445/10000
6849   - 0s - loss: 1.6658e-04 - mean_absolute_error: 0.0045 -
       val_loss: 32.1172 - val_mean_absolute_error: 3.6117
6850  epoch_end_callback epoch 8444 lr 7.8125e-06
6851  Epoch 8446/10000
6852   - 0s - loss: 1.8375e-04 - mean_absolute_error: 0.0050 -
       val_loss: 32.1334 - val_mean_absolute_error: 3.6117
6853  epoch_end_callback epoch 8445 lr 7.8125e-06
6854  Epoch 8447/10000
6855   - 0s - loss: 1.8397e-04 - mean_absolute_error: 0.0044 -
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6855  val_loss: 32.1324 - val_mean_absolute_error: 3.6111
6856  epoch_end_callback epoch 8446 lr 7.8125e-06
6857  Epoch 8448/10000
6858   - 0s - loss: 1.9121e-04 - mean_absolute_error: 0.0041 -
      val_loss: 32.1355 - val_mean_absolute_error: 3.6108
6859  epoch_end_callback epoch 8447 lr 7.8125e-06
6860  Epoch 8449/10000
6861   - 0s - loss: 1.7721e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1486 - val_mean_absolute_error: 3.6119
6862  epoch_end_callback epoch 8448 lr 7.8125e-06
6863  Epoch 8450/10000
6864   - 0s - loss: 1.8802e-04 - mean_absolute_error: 0.0049 -
      val_loss: 32.1369 - val_mean_absolute_error: 3.6110
6865
6866  Epoch 08450: saving model to ./model/
      model_Epoch8450_val_mean_absolute_error3.611.h5
6867  epoch_end_callback epoch 8449 lr 7.8125e-06
6868  Epoch 8451/10000
6869   - 0s - loss: 1.8117e-04 - mean_absolute_error: 0.0046 -
      val_loss: 32.1283 - val_mean_absolute_error: 3.6113
6870  epoch_end_callback epoch 8450 lr 7.8125e-06
6871  Epoch 8452/10000
6872   - 0s - loss: 1.8024e-04 - mean_absolute_error: 0.0040 -
      val_loss: 32.1317 - val_mean_absolute_error: 3.6118
6873  epoch_end_callback epoch 8451 lr 7.8125e-06
6874  Epoch 8453/10000
6875   - 0s - loss: 1.7651e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1318 - val_mean_absolute_error: 3.6112
6876  epoch_end_callback epoch 8452 lr 7.8125e-06
6877  Epoch 8454/10000
6878   - 0s - loss: 1.8563e-04 - mean_absolute_error: 0.0047 -
      val_loss: 32.1315 - val_mean_absolute_error: 3.6116
6879  epoch_end_callback epoch 8453 lr 7.8125e-06
6880  Epoch 8455/10000
6881   - 0s - loss: 1.7875e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1398 - val_mean_absolute_error: 3.6118
6882  epoch_end_callback epoch 8454 lr 7.8125e-06
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6883  Epoch 8456/10000
6884   - 0s - loss: 1.9013e-04 - mean_absolute_error: 0.0042 -
       val_loss: 32.1253 - val_mean_absolute_error: 3.6110
6885  epoch_end_callback epoch 8455 lr 7.8125e-06
6886  Epoch 8457/10000
6887   - 0s - loss: 1.8031e-04 - mean_absolute_error: 0.0047 -
       val_loss: 32.1237 - val_mean_absolute_error: 3.6115
6888  epoch_end_callback epoch 8456 lr 7.8125e-06
6889  Epoch 8458/10000
6890   - 0s - loss: 1.8250e-04 - mean_absolute_error: 0.0046 -
       val_loss: 32.1308 - val_mean_absolute_error: 3.6115
6891  epoch_end_callback epoch 8457 lr 7.8125e-06
6892  Epoch 8459/10000
6893   - 0s - loss: 1.7088e-04 - mean_absolute_error: 0.0041 -
       val_loss: 32.1325 - val_mean_absolute_error: 3.6113
6894  epoch_end_callback epoch 8458 lr 7.8125e-06
6895  Epoch 8460/10000
6896   - 0s - loss: 1.7758e-04 - mean_absolute_error: 0.0046 -
       val_loss: 32.1347 - val_mean_absolute_error: 3.6118
6897
6898  Epoch 08460: saving model to ./model/
       model_Epoch8460_val_mean_absolute_error3.612.h5
6899  epoch_end_callback epoch 8459 lr 7.8125e-06
6900  Epoch 8461/10000
6901   - 0s - loss: 1.8658e-04 - mean_absolute_error: 0.0042 -
       val_loss: 32.1359 - val_mean_absolute_error: 3.6115
6902  epoch_end_callback epoch 8460 lr 7.8125e-06
6903  Epoch 8462/10000
6904   - 0s - loss: 1.8585e-04 - mean_absolute_error: 0.0043 -
       val_loss: 32.1340 - val_mean_absolute_error: 3.6118
6905  epoch_end_callback epoch 8461 lr 7.8125e-06
6906  Epoch 8463/10000
6907   - 0s - loss: 1.8146e-04 - mean_absolute_error: 0.0046 -
       val_loss: 32.1320 - val_mean_absolute_error: 3.6116
6908  epoch_end_callback epoch 8462 lr 7.8125e-06
6909  Epoch 8464/10000
6910   - 0s - loss: 1.7164e-04 - mean_absolute_error: 0.0046 -
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6910  val_loss: 32.1256 - val_mean_absolute_error: 3.6110
6911  epoch_end_callback epoch 8463 lr 7.8125e-06
6912  Epoch 8465/10000
6913   - 0s - loss: 1.5324e-04 - mean_absolute_error: 0.0039 -
      val_loss: 32.1221 - val_mean_absolute_error: 3.6116
6914  epoch_end_callback epoch 8464 lr 7.8125e-06
6915  Epoch 8466/10000
6916   - 0s - loss: 1.8886e-04 - mean_absolute_error: 0.0050 -
      val_loss: 32.1364 - val_mean_absolute_error: 3.6121
6917  epoch_end_callback epoch 8465 lr 7.8125e-06
6918  Epoch 8467/10000
6919   - 0s - loss: 1.7723e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1344 - val_mean_absolute_error: 3.6121
6920  epoch_end_callback epoch 8466 lr 7.8125e-06
6921  Epoch 8468/10000
6922   - 0s - loss: 1.8340e-04 - mean_absolute_error: 0.0048 -
      val_loss: 32.1383 - val_mean_absolute_error: 3.6116
6923  epoch_end_callback epoch 8467 lr 7.8125e-06
6924  Epoch 8469/10000
6925   - 0s - loss: 1.8554e-04 - mean_absolute_error: 0.0047 -
      val_loss: 32.1395 - val_mean_absolute_error: 3.6120
6926  epoch_end_callback epoch 8468 lr 7.8125e-06
6927  Epoch 8470/10000
6928   - 0s - loss: 1.6242e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1382 - val_mean_absolute_error: 3.6115
6929
6930  Epoch 08470: saving model to ./model/
      model_Epoch8470_val_mean_absolute_error3.612.h5
6931  epoch_end_callback epoch 8469 lr 7.8125e-06
6932  Epoch 8471/10000
6933   - 0s - loss: 1.8408e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1403 - val_mean_absolute_error: 3.6115
6934  epoch_end_callback epoch 8470 lr 7.8125e-06
6935  Epoch 8472/10000
6936   - 0s - loss: 1.8875e-04 - mean_absolute_error: 0.0048 -
      val_loss: 32.1308 - val_mean_absolute_error: 3.6111
6937  epoch_end_callback epoch 8471 lr 7.8125e-06
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6938  Epoch 8473/10000
6939   - 0s - loss: 1.7774e-04 - mean_absolute_error: 0.0045 -
       val_loss: 32.1315 - val_mean_absolute_error: 3.6112
6940  epoch_end_callback epoch 8472 lr 7.8125e-06
6941  Epoch 8474/10000
6942   - 0s - loss: 1.8275e-04 - mean_absolute_error: 0.0046 -
       val_loss: 32.1327 - val_mean_absolute_error: 3.6120
6943  epoch_end_callback epoch 8473 lr 7.8125e-06
6944  Epoch 8475/10000
6945   - 0s - loss: 1.7986e-04 - mean_absolute_error: 0.0042 -
       val_loss: 32.1394 - val_mean_absolute_error: 3.6119
6946  epoch_end_callback epoch 8474 lr 7.8125e-06
6947  Epoch 8476/10000
6948   - 0s - loss: 1.7996e-04 - mean_absolute_error: 0.0044 -
       val_loss: 32.1156 - val_mean_absolute_error: 3.6117
6949  epoch_end_callback epoch 8475 lr 7.8125e-06
6950  Epoch 8477/10000
6951   - 0s - loss: 1.7267e-04 - mean_absolute_error: 0.0046 -
       val_loss: 32.1331 - val_mean_absolute_error: 3.6114
6952  epoch_end_callback epoch 8476 lr 7.8125e-06
6953  Epoch 8478/10000
6954   - 0s - loss: 1.8301e-04 - mean_absolute_error: 0.0047 -
       val_loss: 32.1358 - val_mean_absolute_error: 3.6119
6955  epoch_end_callback epoch 8477 lr 7.8125e-06
6956  Epoch 8479/10000
6957   - 0s - loss: 1.5473e-04 - mean_absolute_error: 0.0038 -
       val_loss: 32.1293 - val_mean_absolute_error: 3.6116
6958  epoch_end_callback epoch 8478 lr 7.8125e-06
6959  Epoch 8480/10000
6960   - 0s - loss: 1.8389e-04 - mean_absolute_error: 0.0046 -
       val_loss: 32.1528 - val_mean_absolute_error: 3.6112
6961
6962  Epoch 08480: saving model to ./model/
       model_Epoch8480_val_mean_absolute_error3.611.h5
6963  epoch_end_callback epoch 8479 lr 7.8125e-06
6964  Epoch 8481/10000
6965   - 0s - loss: 1.7182e-04 - mean_absolute_error: 0.0049 -
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6965 val_loss: 32.1316 - val_mean_absolute_error: 3.6117
6966 epoch_end_callback epoch 8480 lr 7.8125e-06
6967 Epoch 8482/10000
6968  - 0s - loss: 1.8579e-04 - mean_absolute_error: 0.0047 -
     val_loss: 32.1330 - val_mean_absolute_error: 3.6116
6969 epoch_end_callback epoch 8481 lr 7.8125e-06
6970 Epoch 8483/10000
6971  - 0s - loss: 1.9332e-04 - mean_absolute_error: 0.0041 -
     val_loss: 32.1306 - val_mean_absolute_error: 3.6118
6972 epoch_end_callback epoch 8482 lr 7.8125e-06
6973 Epoch 8484/10000
6974  - 0s - loss: 1.7832e-04 - mean_absolute_error: 0.0041 -
     val_loss: 32.1328 - val_mean_absolute_error: 3.6119
6975 epoch_end_callback epoch 8483 lr 7.8125e-06
6976 Epoch 8485/10000
6977  - 0s - loss: 1.6607e-04 - mean_absolute_error: 0.0045 -
     val_loss: 32.1177 - val_mean_absolute_error: 3.6110
6978 epoch_end_callback epoch 8484 lr 7.8125e-06
6979 Epoch 8486/10000
6980  - 0s - loss: 1.8397e-04 - mean_absolute_error: 0.0043 -
     val_loss: 32.1313 - val_mean_absolute_error: 3.6116
6981 epoch_end_callback epoch 8485 lr 7.8125e-06
6982 Epoch 8487/10000
6983  - 0s - loss: 1.8232e-04 - mean_absolute_error: 0.0047 -
     val_loss: 32.1312 - val_mean_absolute_error: 3.6112
6984 epoch_end_callback epoch 8486 lr 7.8125e-06
6985 Epoch 8488/10000
6986  - 0s - loss: 1.8500e-04 - mean_absolute_error: 0.0046 -
     val_loss: 32.1298 - val_mean_absolute_error: 3.6117
6987 epoch_end_callback epoch 8487 lr 7.8125e-06
6988 Epoch 8489/10000
6989  - 0s - loss: 1.8217e-04 - mean_absolute_error: 0.0041 -
     val_loss: 32.1413 - val_mean_absolute_error: 3.6119
6990 epoch_end_callback epoch 8488 lr 7.8125e-06
6991 Epoch 8490/10000
6992  - 0s - loss: 1.8253e-04 - mean_absolute_error: 0.0046 -
     val_loss: 32.1588 - val_mean_absolute_error: 3.6123
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6993
6994  Epoch 08490: saving model to ./model/
      model_Epoch8490_val_mean_absolute_error3.612.h5
6995  epoch_end_callback epoch 8489 lr 7.8125e-06
6996  Epoch 8491/10000
6997   - 0s - loss: 1.7297e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1364 - val_mean_absolute_error: 3.6120
6998  epoch_end_callback epoch 8490 lr 7.8125e-06
6999  Epoch 8492/10000
7000   - 0s - loss: 1.6782e-04 - mean_absolute_error: 0.0041 -
      val_loss: 32.1220 - val_mean_absolute_error: 3.6109
7001  epoch_end_callback epoch 8491 lr 7.8125e-06
7002  Epoch 8493/10000
7003   - 0s - loss: 1.7737e-04 - mean_absolute_error: 0.0038 -
      val_loss: 32.1306 - val_mean_absolute_error: 3.6111
7004  epoch_end_callback epoch 8492 lr 7.8125e-06
7005  Epoch 8494/10000
7006   - 0s - loss: 1.7862e-04 - mean_absolute_error: 0.0048 -
      val_loss: 32.1339 - val_mean_absolute_error: 3.6113
7007  epoch_end_callback epoch 8493 lr 7.8125e-06
7008  Epoch 8495/10000
7009   - 0s - loss: 1.7511e-04 - mean_absolute_error: 0.0047 -
      val_loss: 32.1398 - val_mean_absolute_error: 3.6119
7010  epoch_end_callback epoch 8494 lr 7.8125e-06
7011  Epoch 8496/10000
7012   - 0s - loss: 1.7465e-04 - mean_absolute_error: 0.0048 -
      val_loss: 32.1390 - val_mean_absolute_error: 3.6117
7013  epoch_end_callback epoch 8495 lr 7.8125e-06
7014  Epoch 8497/10000
7015   - 0s - loss: 1.8631e-04 - mean_absolute_error: 0.0047 -
      val_loss: 32.1183 - val_mean_absolute_error: 3.6110
7016  epoch_end_callback epoch 8496 lr 7.8125e-06
7017  Epoch 8498/10000
7018   - 0s - loss: 1.7986e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1376 - val_mean_absolute_error: 3.6119
7019  epoch_end_callback epoch 8497 lr 7.8125e-06
7020  Epoch 8499/10000
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7021    - 0s - loss: 1.8285e-04 - mean_absolute_error: 0.0042 -
        val_loss: 32.1312 - val_mean_absolute_error: 3.6116
7022 epoch_end_callback epoch 8498 lr 7.8125e-06
7023 Epoch 8500/10000
7024    - 0s - loss: 1.7742e-04 - mean_absolute_error: 0.0043 -
        val_loss: 32.1318 - val_mean_absolute_error: 3.6115
7025
7026 Epoch 08500: saving model to ./model/
        model_Epoch8500_val_mean_absolute_error3.612.h5
7027 epoch_end_callback epoch 8499 lr 7.8125e-06
7028 Epoch 8501/10000
7029    - 0s - loss: 1.7528e-04 - mean_absolute_error: 0.0042 -
        val_loss: 32.1376 - val_mean_absolute_error: 3.6119
7030 epoch_end_callback epoch 8500 lr 7.8125e-06
7031 Epoch 8502/10000
7032    - 0s - loss: 1.6046e-04 - mean_absolute_error: 0.0045 -
        val_loss: 32.1396 - val_mean_absolute_error: 3.6124
7033 epoch_end_callback epoch 8501 lr 7.8125e-06
7034 Epoch 8503/10000
7035    - 0s - loss: 1.8222e-04 - mean_absolute_error: 0.0050 -
        val_loss: 32.1343 - val_mean_absolute_error: 3.6115
7036 epoch_end_callback epoch 8502 lr 7.8125e-06
7037 Epoch 8504/10000
7038    - 0s - loss: 1.7288e-04 - mean_absolute_error: 0.0040 -
        val_loss: 32.1250 - val_mean_absolute_error: 3.6118
7039 epoch_end_callback epoch 8503 lr 7.8125e-06
7040 Epoch 8505/10000
7041    - 0s - loss: 1.8652e-04 - mean_absolute_error: 0.0050 -
        val_loss: 32.1320 - val_mean_absolute_error: 3.6112
7042 epoch_end_callback epoch 8504 lr 7.8125e-06
7043 Epoch 8506/10000
7044    - 0s - loss: 1.8069e-04 - mean_absolute_error: 0.0046 -
        val_loss: 32.1401 - val_mean_absolute_error: 3.6109
7045 epoch_end_callback epoch 8505 lr 7.8125e-06
7046 Epoch 8507/10000
7047    - 0s - loss: 1.7672e-04 - mean_absolute_error: 0.0044 -
        val_loss: 32.1395 - val_mean_absolute_error: 3.6118
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7048  epoch_end_callback epoch 8506 lr 7.8125e-06
7049  Epoch 8508/10000
7050   - 0s - loss: 1.8262e-04 - mean_absolute_error: 0.0039 -
      val_loss: 32.1364 - val_mean_absolute_error: 3.6123
7051  epoch_end_callback epoch 8507 lr 7.8125e-06
7052  Epoch 8509/10000
7053   - 0s - loss: 1.8332e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1343 - val_mean_absolute_error: 3.6123
7054  epoch_end_callback epoch 8508 lr 7.8125e-06
7055  Epoch 8510/10000
7056   - 0s - loss: 1.8112e-04 - mean_absolute_error: 0.0040 -
      val_loss: 32.1397 - val_mean_absolute_error: 3.6115
7057
7058  Epoch 08510: saving model to ./model/
      model_Epoch8510_val_mean_absolute_error3.612.h5
7059  epoch_end_callback epoch 8509 lr 7.8125e-06
7060  Epoch 8511/10000
7061   - 0s - loss: 1.5802e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1346 - val_mean_absolute_error: 3.6117
7062  epoch_end_callback epoch 8510 lr 7.8125e-06
7063  Epoch 8512/10000
7064   - 0s - loss: 1.7832e-04 - mean_absolute_error: 0.0046 -
      val_loss: 32.1308 - val_mean_absolute_error: 3.6121
7065  epoch_end_callback epoch 8511 lr 7.8125e-06
7066  Epoch 8513/10000
7067   - 0s - loss: 1.8445e-04 - mean_absolute_error: 0.0047 -
      val_loss: 32.1380 - val_mean_absolute_error: 3.6123
7068  epoch_end_callback epoch 8512 lr 7.8125e-06
7069  Epoch 8514/10000
7070   - 0s - loss: 1.8333e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1307 - val_mean_absolute_error: 3.6117
7071  epoch_end_callback epoch 8513 lr 7.8125e-06
7072  Epoch 8515/10000
7073   - 0s - loss: 1.8560e-04 - mean_absolute_error: 0.0040 -
      val_loss: 32.1383 - val_mean_absolute_error: 3.6120
7074  epoch_end_callback epoch 8514 lr 7.8125e-06
7075  Epoch 8516/10000
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7076   - 0s - loss: 1.6769e-04 - mean_absolute_error: 0.0040 -
       val_loss: 32.1313 - val_mean_absolute_error: 3.6117
7077  epoch_end_callback epoch 8515 lr 7.8125e-06
7078  Epoch 8517/10000
7079   - 0s - loss: 1.5403e-04 - mean_absolute_error: 0.0040 -
       val_loss: 32.1506 - val_mean_absolute_error: 3.6126
7080  epoch_end_callback epoch 8516 lr 7.8125e-06
7081  Epoch 8518/10000
7082   - 0s - loss: 1.8275e-04 - mean_absolute_error: 0.0056 -
       val_loss: 32.1344 - val_mean_absolute_error: 3.6109
7083  epoch_end_callback epoch 8517 lr 7.8125e-06
7084  Epoch 8519/10000
7085   - 0s - loss: 1.6876e-04 - mean_absolute_error: 0.0043 -
       val_loss: 32.1341 - val_mean_absolute_error: 3.6118
7086  epoch_end_callback epoch 8518 lr 7.8125e-06
7087  Epoch 8520/10000
7088   - 0s - loss: 1.8979e-04 - mean_absolute_error: 0.0047 -
       val_loss: 32.1306 - val_mean_absolute_error: 3.6115
7089
7090  Epoch 08520: saving model to ./model/
       model_Epoch8520_val_mean_absolute_error3.611.h5
7091  epoch_end_callback epoch 8519 lr 7.8125e-06
7092  Epoch 8521/10000
7093   - 0s - loss: 1.7419e-04 - mean_absolute_error: 0.0044 -
       val_loss: 32.1290 - val_mean_absolute_error: 3.6113
7094  epoch_end_callback epoch 8520 lr 7.8125e-06
7095  Epoch 8522/10000
7096   - 0s - loss: 1.7811e-04 - mean_absolute_error: 0.0045 -
       val_loss: 32.1275 - val_mean_absolute_error: 3.6115
7097  epoch_end_callback epoch 8521 lr 7.8125e-06
7098  Epoch 8523/10000
7099   - 0s - loss: 1.8413e-04 - mean_absolute_error: 0.0045 -
       val_loss: 32.1317 - val_mean_absolute_error: 3.6114
7100  epoch_end_callback epoch 8522 lr 7.8125e-06
7101  Epoch 8524/10000
7102   - 0s - loss: 1.8019e-04 - mean_absolute_error: 0.0045 -
       val_loss: 32.1370 - val_mean_absolute_error: 3.6114
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7103  epoch_end_callback epoch 8523 lr 7.8125e-06
7104  Epoch 8525/10000
7105   - 0s - loss: 1.7752e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1331 - val_mean_absolute_error: 3.6116
7106  epoch_end_callback epoch 8524 lr 7.8125e-06
7107  Epoch 8526/10000
7108   - 0s - loss: 1.8476e-04 - mean_absolute_error: 0.0047 -
      val_loss: 32.1279 - val_mean_absolute_error: 3.6121
7109  epoch_end_callback epoch 8525 lr 7.8125e-06
7110  Epoch 8527/10000
7111   - 0s - loss: 1.8387e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1344 - val_mean_absolute_error: 3.6129
7112  epoch_end_callback epoch 8526 lr 7.8125e-06
7113  Epoch 8528/10000
7114   - 0s - loss: 1.7810e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1260 - val_mean_absolute_error: 3.6114
7115  epoch_end_callback epoch 8527 lr 7.8125e-06
7116  Epoch 8529/10000
7117   - 0s - loss: 1.5217e-04 - mean_absolute_error: 0.0038 -
      val_loss: 32.1555 - val_mean_absolute_error: 3.6127
7118  epoch_end_callback epoch 8528 lr 7.8125e-06
7119  Epoch 8530/10000
7120   - 0s - loss: 1.8487e-04 - mean_absolute_error: 0.0048 -
      val_loss: 32.1440 - val_mean_absolute_error: 3.6115
7121
7122  Epoch 08530: saving model to ./model/
      model_Epoch8530_val_mean_absolute_error3.611.h5
7123  epoch_end_callback epoch 8529 lr 7.8125e-06
7124  Epoch 8531/10000
7125   - 0s - loss: 1.7693e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1180 - val_mean_absolute_error: 3.6118
7126  epoch_end_callback epoch 8530 lr 7.8125e-06
7127  Epoch 8532/10000
7128   - 0s - loss: 1.8066e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1367 - val_mean_absolute_error: 3.6120
7129  epoch_end_callback epoch 8531 lr 7.8125e-06
7130  Epoch 8533/10000
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7131   - 0s - loss: 1.7164e-04 - mean_absolute_error: 0.0044 -
       val_loss: 32.1434 - val_mean_absolute_error: 3.6121
7132 epoch_end_callback epoch 8532 lr 7.8125e-06
7133 Epoch 8534/10000
7134   - 0s - loss: 1.6809e-04 - mean_absolute_error: 0.0042 -
       val_loss: 32.1356 - val_mean_absolute_error: 3.6118
7135 epoch_end_callback epoch 8533 lr 7.8125e-06
7136 Epoch 8535/10000
7137   - 0s - loss: 1.8081e-04 - mean_absolute_error: 0.0048 -
       val_loss: 32.1427 - val_mean_absolute_error: 3.6126
7138 epoch_end_callback epoch 8534 lr 7.8125e-06
7139 Epoch 8536/10000
7140   - 0s - loss: 1.7579e-04 - mean_absolute_error: 0.0045 -
       val_loss: 32.1329 - val_mean_absolute_error: 3.6125
7141 epoch_end_callback epoch 8535 lr 7.8125e-06
7142 Epoch 8537/10000
7143   - 0s - loss: 1.7961e-04 - mean_absolute_error: 0.0046 -
       val_loss: 32.1423 - val_mean_absolute_error: 3.6120
7144 epoch_end_callback epoch 8536 lr 7.8125e-06
7145 Epoch 8538/10000
7146   - 0s - loss: 1.6843e-04 - mean_absolute_error: 0.0044 -
       val_loss: 32.1389 - val_mean_absolute_error: 3.6123
7147 epoch_end_callback epoch 8537 lr 7.8125e-06
7148 Epoch 8539/10000
7149   - 0s - loss: 1.7877e-04 - mean_absolute_error: 0.0045 -
       val_loss: 32.1368 - val_mean_absolute_error: 3.6118
7150 epoch_end_callback epoch 8538 lr 7.8125e-06
7151 Epoch 8540/10000
7152   - 0s - loss: 1.8511e-04 - mean_absolute_error: 0.0049 -
       val_loss: 32.1347 - val_mean_absolute_error: 3.6119
7153
7154 Epoch 08540: saving model to ./model/
       model_Epoch8540_val_mean_absolute_error3.612.h5
7155 epoch_end_callback epoch 8539 lr 7.8125e-06
7156 Epoch 8541/10000
7157   - 0s - loss: 1.7916e-04 - mean_absolute_error: 0.0042 -
       val_loss: 32.1313 - val_mean_absolute_error: 3.6113
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7158 epoch_end_callback epoch 8540 lr 7.8125e-06
7159 Epoch 8542/10000
7160  - 0s - loss: 1.6996e-04 - mean_absolute_error: 0.0046 -
     val_loss: 32.1314 - val_mean_absolute_error: 3.6122
7161 epoch_end_callback epoch 8541 lr 7.8125e-06
7162 Epoch 8543/10000
7163  - 0s - loss: 1.7336e-04 - mean_absolute_error: 0.0044 -
     val_loss: 32.1675 - val_mean_absolute_error: 3.6132
7164 epoch_end_callback epoch 8542 lr 7.8125e-06
7165 Epoch 8544/10000
7166  - 0s - loss: 1.7176e-04 - mean_absolute_error: 0.0047 -
     val_loss: 32.1408 - val_mean_absolute_error: 3.6116
7167 epoch_end_callback epoch 8543 lr 7.8125e-06
7168 Epoch 8545/10000
7169  - 0s - loss: 1.6598e-04 - mean_absolute_error: 0.0040 -
     val_loss: 32.1406 - val_mean_absolute_error: 3.6119
7170 epoch_end_callback epoch 8544 lr 7.8125e-06
7171 Epoch 8546/10000
7172  - 0s - loss: 1.6840e-04 - mean_absolute_error: 0.0048 -
     val_loss: 32.1374 - val_mean_absolute_error: 3.6120
7173 epoch_end_callback epoch 8545 lr 7.8125e-06
7174 Epoch 8547/10000
7175  - 0s - loss: 1.7843e-04 - mean_absolute_error: 0.0044 -
     val_loss: 32.1362 - val_mean_absolute_error: 3.6125
7176 epoch_end_callback epoch 8546 lr 7.8125e-06
7177 Epoch 8548/10000
7178  - 0s - loss: 1.5317e-04 - mean_absolute_error: 0.0043 -
     val_loss: 32.1356 - val_mean_absolute_error: 3.6120
7179 epoch_end_callback epoch 8547 lr 7.8125e-06
7180 Epoch 8549/10000
7181  - 0s - loss: 1.7896e-04 - mean_absolute_error: 0.0046 -
     val_loss: 32.1354 - val_mean_absolute_error: 3.6119
7182 epoch_end_callback epoch 8548 lr 7.8125e-06
7183 Epoch 8550/10000
7184  - 0s - loss: 1.8924e-04 - mean_absolute_error: 0.0041 -
     val_loss: 32.1344 - val_mean_absolute_error: 3.6120
7185
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7186  Epoch 08550: saving model to ./model/
      model_Epoch8550_val_mean_absolute_error3.612.h5
7187  epoch_end_callback epoch 8549 lr 7.8125e-06
7188  Epoch 8551/10000
7189   - 0s - loss: 1.7230e-04 - mean_absolute_error: 0.0049 -
      val_loss: 32.1394 - val_mean_absolute_error: 3.6127
7190  epoch_end_callback epoch 8550 lr 7.8125e-06
7191  Epoch 8552/10000
7192   - 0s - loss: 1.9967e-04 - mean_absolute_error: 0.0041 -
      val_loss: 32.1404 - val_mean_absolute_error: 3.6122
7193  epoch_end_callback epoch 8551 lr 7.8125e-06
7194  Epoch 8553/10000
7195   - 0s - loss: 1.7381e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1463 - val_mean_absolute_error: 3.6122
7196  epoch_end_callback epoch 8552 lr 7.8125e-06
7197  Epoch 8554/10000
7198   - 0s - loss: 1.7311e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1290 - val_mean_absolute_error: 3.6118
7199  epoch_end_callback epoch 8553 lr 7.8125e-06
7200  Epoch 8555/10000
7201   - 0s - loss: 2.0867e-04 - mean_absolute_error: 0.0049 -
      val_loss: 32.1331 - val_mean_absolute_error: 3.6119
7202  epoch_end_callback epoch 8554 lr 7.8125e-06
7203  Epoch 8556/10000
7204   - 0s - loss: 1.6569e-04 - mean_absolute_error: 0.0041 -
      val_loss: 32.1108 - val_mean_absolute_error: 3.6110
7205  epoch_end_callback epoch 8555 lr 7.8125e-06
7206  Epoch 8557/10000
7207   - 0s - loss: 1.8449e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1490 - val_mean_absolute_error: 3.6124
7208  epoch_end_callback epoch 8556 lr 7.8125e-06
7209  Epoch 8558/10000
7210   - 0s - loss: 1.6778e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1298 - val_mean_absolute_error: 3.6117
7211  epoch_end_callback epoch 8557 lr 7.8125e-06
7212  Epoch 8559/10000
7213   - 0s - loss: 1.7204e-04 - mean_absolute_error: 0.0046 -
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7213  val_loss: 32.1470 - val_mean_absolute_error: 3.6124
7214  epoch_end_callback epoch 8558 lr 7.8125e-06
7215  Epoch 8560/10000
7216   - 0s - loss: 1.7330e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1405 - val_mean_absolute_error: 3.6126
7217
7218  Epoch 08560: saving model to ./model/
      model_Epoch8560_val_mean_absolute_error3.613.h5
7219  epoch_end_callback epoch 8559 lr 7.8125e-06
7220  Epoch 8561/10000
7221   - 0s - loss: 1.7826e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1475 - val_mean_absolute_error: 3.6125
7222  epoch_end_callback epoch 8560 lr 7.8125e-06
7223  Epoch 8562/10000
7224   - 0s - loss: 1.7556e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1402 - val_mean_absolute_error: 3.6122
7225  epoch_end_callback epoch 8561 lr 7.8125e-06
7226  Epoch 8563/10000
7227   - 0s - loss: 1.7733e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1343 - val_mean_absolute_error: 3.6120
7228  epoch_end_callback epoch 8562 lr 7.8125e-06
7229  Epoch 8564/10000
7230   - 0s - loss: 1.6859e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1368 - val_mean_absolute_error: 3.6113
7231  epoch_end_callback epoch 8563 lr 7.8125e-06
7232  Epoch 8565/10000
7233   - 0s - loss: 1.8475e-04 - mean_absolute_error: 0.0047 -
      val_loss: 32.1482 - val_mean_absolute_error: 3.6132
7234  epoch_end_callback epoch 8564 lr 7.8125e-06
7235  Epoch 8566/10000
7236   - 0s - loss: 1.7597e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1428 - val_mean_absolute_error: 3.6117
7237  epoch_end_callback epoch 8565 lr 7.8125e-06
7238  Epoch 8567/10000
7239   - 0s - loss: 1.7419e-04 - mean_absolute_error: 0.0047 -
      val_loss: 32.1365 - val_mean_absolute_error: 3.6122
7240  epoch_end_callback epoch 8566 lr 7.8125e-06
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7241  Epoch 8568/10000
7242   - 0s - loss: 1.9464e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1419 - val_mean_absolute_error: 3.6121
7243  epoch_end_callback epoch 8567 lr 7.8125e-06
7244  Epoch 8569/10000
7245   - 0s - loss: 1.7219e-04 - mean_absolute_error: 0.0035 -
      val_loss: 32.1301 - val_mean_absolute_error: 3.6115
7246  epoch_end_callback epoch 8568 lr 7.8125e-06
7247  Epoch 8570/10000
7248   - 0s - loss: 1.8911e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1509 - val_mean_absolute_error: 3.6124
7249
7250  Epoch 08570: saving model to ./model/
      model_Epoch8570_val_mean_absolute_error3.612.h5
7251  epoch_end_callback epoch 8569 lr 7.8125e-06
7252  Epoch 8571/10000
7253   - 0s - loss: 1.8342e-04 - mean_absolute_error: 0.0041 -
      val_loss: 32.1377 - val_mean_absolute_error: 3.6121
7254  epoch_end_callback epoch 8570 lr 7.8125e-06
7255  Epoch 8572/10000
7256   - 0s - loss: 1.7731e-04 - mean_absolute_error: 0.0049 -
      val_loss: 32.1564 - val_mean_absolute_error: 3.6126
7257  epoch_end_callback epoch 8571 lr 7.8125e-06
7258  Epoch 8573/10000
7259   - 0s - loss: 1.7132e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1403 - val_mean_absolute_error: 3.6124
7260  epoch_end_callback epoch 8572 lr 7.8125e-06
7261  Epoch 8574/10000
7262   - 0s - loss: 1.8009e-04 - mean_absolute_error: 0.0041 -
      val_loss: 32.1388 - val_mean_absolute_error: 3.6122
7263  epoch_end_callback epoch 8573 lr 7.8125e-06
7264  Epoch 8575/10000
7265   - 0s - loss: 1.6678e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1418 - val_mean_absolute_error: 3.6117
7266  epoch_end_callback epoch 8574 lr 7.8125e-06
7267  Epoch 8576/10000
7268   - 0s - loss: 1.6380e-04 - mean_absolute_error: 0.0044 -
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7268 val_loss: 32.1300 - val_mean_absolute_error: 3.6115
7269 epoch_end_callback epoch 8575 lr 7.8125e-06
7270 Epoch 8577/10000
7271  - 0s - loss: 1.7840e-04 - mean_absolute_error: 0.0049 -
     val_loss: 32.1288 - val_mean_absolute_error: 3.6118
7272 epoch_end_callback epoch 8576 lr 7.8125e-06
7273 Epoch 8578/10000
7274  - 0s - loss: 1.7231e-04 - mean_absolute_error: 0.0042 -
     val_loss: 32.1249 - val_mean_absolute_error: 3.6109
7275 epoch_end_callback epoch 8577 lr 7.8125e-06
7276 Epoch 8579/10000
7277  - 0s - loss: 1.7220e-04 - mean_absolute_error: 0.0043 -
     val_loss: 32.1413 - val_mean_absolute_error: 3.6117
7278 epoch_end_callback epoch 8578 lr 7.8125e-06
7279 Epoch 8580/10000
7280  - 0s - loss: 1.7752e-04 - mean_absolute_error: 0.0041 -
     val_loss: 32.1346 - val_mean_absolute_error: 3.6111
7281
7282 Epoch 08580: saving model to ./model/
     model_Epoch8580_val_mean_absolute_error3.611.h5
7283 epoch_end_callback epoch 8579 lr 7.8125e-06
7284 Epoch 8581/10000
7285  - 0s - loss: 1.7454e-04 - mean_absolute_error: 0.0047 -
     val_loss: 32.1587 - val_mean_absolute_error: 3.6128
7286 epoch_end_callback epoch 8580 lr 7.8125e-06
7287 Epoch 8582/10000
7288  - 0s - loss: 1.8702e-04 - mean_absolute_error: 0.0051 -
     val_loss: 32.1487 - val_mean_absolute_error: 3.6130
7289 epoch_end_callback epoch 8581 lr 7.8125e-06
7290 Epoch 8583/10000
7291  - 0s - loss: 1.7058e-04 - mean_absolute_error: 0.0042 -
     val_loss: 32.1396 - val_mean_absolute_error: 3.6121
7292 epoch_end_callback epoch 8582 lr 7.8125e-06
7293 Epoch 8584/10000
7294  - 0s - loss: 1.7124e-04 - mean_absolute_error: 0.0043 -
     val_loss: 32.1289 - val_mean_absolute_error: 3.6117
7295 epoch_end_callback epoch 8583 lr 7.8125e-06
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7296  Epoch 8585/10000
7297   - 0s - loss: 1.9062e-04 - mean_absolute_error: 0.0047 -
       val_loss: 32.1391 - val_mean_absolute_error: 3.6117
7298  epoch_end_callback epoch 8584 lr 7.8125e-06
7299  Epoch 8586/10000
7300   - 0s - loss: 1.8242e-04 - mean_absolute_error: 0.0044 -
       val_loss: 32.1387 - val_mean_absolute_error: 3.6124
7301  epoch_end_callback epoch 8585 lr 7.8125e-06
7302  Epoch 8587/10000
7303   - 0s - loss: 1.7567e-04 - mean_absolute_error: 0.0040 -
       val_loss: 32.1373 - val_mean_absolute_error: 3.6124
7304  epoch_end_callback epoch 8586 lr 7.8125e-06
7305  Epoch 8588/10000
7306   - 0s - loss: 1.7857e-04 - mean_absolute_error: 0.0045 -
       val_loss: 32.1416 - val_mean_absolute_error: 3.6122
7307  epoch_end_callback epoch 8587 lr 7.8125e-06
7308  Epoch 8589/10000
7309   - 0s - loss: 1.7269e-04 - mean_absolute_error: 0.0043 -
       val_loss: 32.1297 - val_mean_absolute_error: 3.6122
7310  epoch_end_callback epoch 8588 lr 7.8125e-06
7311  Epoch 8590/10000
7312   - 0s - loss: 1.6940e-04 - mean_absolute_error: 0.0040 -
       val_loss: 32.1375 - val_mean_absolute_error: 3.6129
7313
7314  Epoch 08590: saving model to ./model/
       model_Epoch8590_val_mean_absolute_error3.613.h5
7315  epoch_end_callback epoch 8589 lr 7.8125e-06
7316  Epoch 8591/10000
7317   - 0s - loss: 1.8626e-04 - mean_absolute_error: 0.0045 -
       val_loss: 32.1388 - val_mean_absolute_error: 3.6118
7318  epoch_end_callback epoch 8590 lr 7.8125e-06
7319  Epoch 8592/10000
7320   - 0s - loss: 1.8151e-04 - mean_absolute_error: 0.0042 -
       val_loss: 32.1410 - val_mean_absolute_error: 3.6125
7321  epoch_end_callback epoch 8591 lr 7.8125e-06
7322  Epoch 8593/10000
7323   - 0s - loss: 1.8232e-04 - mean_absolute_error: 0.0046 -
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7323  val_loss: 32.1222 - val_mean_absolute_error: 3.6109
7324  epoch_end_callback epoch 8592 lr 7.8125e-06
7325  Epoch 8594/10000
7326   - 0s - loss: 1.6724e-04 - mean_absolute_error: 0.0040 -
      val_loss: 32.1579 - val_mean_absolute_error: 3.6128
7327  epoch_end_callback epoch 8593 lr 7.8125e-06
7328  Epoch 8595/10000
7329   - 0s - loss: 1.7777e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1395 - val_mean_absolute_error: 3.6115
7330  epoch_end_callback epoch 8594 lr 7.8125e-06
7331  Epoch 8596/10000
7332   - 0s - loss: 1.7674e-04 - mean_absolute_error: 0.0047 -
      val_loss: 32.1368 - val_mean_absolute_error: 3.6119
7333  epoch_end_callback epoch 8595 lr 7.8125e-06
7334  Epoch 8597/10000
7335   - 0s - loss: 1.7689e-04 - mean_absolute_error: 0.0046 -
      val_loss: 32.1328 - val_mean_absolute_error: 3.6119
7336  epoch_end_callback epoch 8596 lr 7.8125e-06
7337  Epoch 8598/10000
7338   - 0s - loss: 1.6865e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1347 - val_mean_absolute_error: 3.6112
7339  epoch_end_callback epoch 8597 lr 7.8125e-06
7340  Epoch 8599/10000
7341   - 0s - loss: 1.6729e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1215 - val_mean_absolute_error: 3.6115
7342  epoch_end_callback epoch 8598 lr 7.8125e-06
7343  Epoch 8600/10000
7344   - 0s - loss: 1.6963e-04 - mean_absolute_error: 0.0051 -
      val_loss: 32.1285 - val_mean_absolute_error: 3.6109
7345
7346  Epoch 08600: saving model to ./model/
      model_Epoch8600_val_mean_absolute_error3.611.h5
7347  epoch_end_callback epoch 8599 lr 7.8125e-06
7348  Epoch 8601/10000
7349   - 0s - loss: 1.7577e-04 - mean_absolute_error: 0.0048 -
      val_loss: 32.1363 - val_mean_absolute_error: 3.6118
7350  epoch_end_callback epoch 8600 lr 7.8125e-06
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7351  Epoch 8602/10000
7352   - 0s - loss: 1.7031e-04 - mean_absolute_error: 0.0045 -
       val_loss: 32.1455 - val_mean_absolute_error: 3.6120
7353  epoch_end_callback epoch 8601 lr 7.8125e-06
7354  Epoch 8603/10000
7355   - 0s - loss: 1.8115e-04 - mean_absolute_error: 0.0048 -
       val_loss: 32.1300 - val_mean_absolute_error: 3.6113
7356  epoch_end_callback epoch 8602 lr 7.8125e-06
7357  Epoch 8604/10000
7358   - 0s - loss: 1.6667e-04 - mean_absolute_error: 0.0040 -
       val_loss: 32.1251 - val_mean_absolute_error: 3.6114
7359  epoch_end_callback epoch 8603 lr 7.8125e-06
7360  Epoch 8605/10000
7361   - 0s - loss: 1.8004e-04 - mean_absolute_error: 0.0050 -
       val_loss: 32.1413 - val_mean_absolute_error: 3.6114
7362  epoch_end_callback epoch 8604 lr 7.8125e-06
7363  Epoch 8606/10000
7364   - 0s - loss: 1.7848e-04 - mean_absolute_error: 0.0045 -
       val_loss: 32.1303 - val_mean_absolute_error: 3.6115
7365  epoch_end_callback epoch 8605 lr 7.8125e-06
7366  Epoch 8607/10000
7367   - 0s - loss: 1.7475e-04 - mean_absolute_error: 0.0042 -
       val_loss: 32.1338 - val_mean_absolute_error: 3.6119
7368  epoch_end_callback epoch 8606 lr 7.8125e-06
7369  Epoch 8608/10000
7370   - 0s - loss: 1.7270e-04 - mean_absolute_error: 0.0043 -
       val_loss: 32.1216 - val_mean_absolute_error: 3.6116
7371  epoch_end_callback epoch 8607 lr 7.8125e-06
7372  Epoch 8609/10000
7373   - 0s - loss: 1.8366e-04 - mean_absolute_error: 0.0042 -
       val_loss: 32.1327 - val_mean_absolute_error: 3.6121
7374  epoch_end_callback epoch 8608 lr 7.8125e-06
7375  Epoch 8610/10000
7376   - 0s - loss: 1.8557e-04 - mean_absolute_error: 0.0047 -
       val_loss: 32.1310 - val_mean_absolute_error: 3.6114
7377
7378  Epoch 08610: saving model to ./model/
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7378  model_Epoch8610_val_mean_absolute_error3.611.h5
7379  epoch_end_callback epoch 8609 lr 7.8125e-06
7380  Epoch 8611/10000
7381   - 0s - loss: 1.4792e-04 - mean_absolute_error: 0.0037 -
      val_loss: 32.1468 - val_mean_absolute_error: 3.6124
7382  epoch_end_callback epoch 8610 lr 7.8125e-06
7383  Epoch 8612/10000
7384   - 0s - loss: 1.7985e-04 - mean_absolute_error: 0.0046 -
      val_loss: 32.1394 - val_mean_absolute_error: 3.6124
7385  epoch_end_callback epoch 8611 lr 7.8125e-06
7386  Epoch 8613/10000
7387   - 0s - loss: 1.6874e-04 - mean_absolute_error: 0.0047 -
      val_loss: 32.1409 - val_mean_absolute_error: 3.6125
7388  epoch_end_callback epoch 8612 lr 7.8125e-06
7389  Epoch 8614/10000
7390   - 0s - loss: 1.7583e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1380 - val_mean_absolute_error: 3.6123
7391  epoch_end_callback epoch 8613 lr 7.8125e-06
7392  Epoch 8615/10000
7393   - 0s - loss: 1.7437e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1313 - val_mean_absolute_error: 3.6121
7394  epoch_end_callback epoch 8614 lr 7.8125e-06
7395  Epoch 8616/10000
7396   - 0s - loss: 1.7551e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1435 - val_mean_absolute_error: 3.6121
7397  epoch_end_callback epoch 8615 lr 7.8125e-06
7398  Epoch 8617/10000
7399   - 0s - loss: 1.8793e-04 - mean_absolute_error: 0.0049 -
      val_loss: 32.1369 - val_mean_absolute_error: 3.6119
7400  epoch_end_callback epoch 8616 lr 7.8125e-06
7401  Epoch 8618/10000
7402   - 0s - loss: 1.6915e-04 - mean_absolute_error: 0.0041 -
      val_loss: 32.1271 - val_mean_absolute_error: 3.6110
7403  epoch_end_callback epoch 8617 lr 7.8125e-06
7404  Epoch 8619/10000
7405   - 0s - loss: 1.8173e-04 - mean_absolute_error: 0.0046 -
      val_loss: 32.1270 - val_mean_absolute_error: 3.6111
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7406 epoch_end_callback epoch 8618 lr 7.8125e-06
7407 Epoch 8620/10000
7408  - 0s - loss: 1.7250e-04 - mean_absolute_error: 0.0042 -
     val_loss: 32.1326 - val_mean_absolute_error: 3.6116
7409
7410 Epoch 08620: saving model to ./model/
     model_Epoch8620_val_mean_absolute_error3.612.h5
7411 epoch_end_callback epoch 8619 lr 7.8125e-06
7412 Epoch 8621/10000
7413  - 0s - loss: 1.7681e-04 - mean_absolute_error: 0.0043 -
     val_loss: 32.1615 - val_mean_absolute_error: 3.6119
7414 epoch_end_callback epoch 8620 lr 7.8125e-06
7415 Epoch 8622/10000
7416  - 0s - loss: 1.7362e-04 - mean_absolute_error: 0.0045 -
     val_loss: 32.1468 - val_mean_absolute_error: 3.6124
7417 epoch_end_callback epoch 8621 lr 7.8125e-06
7418 Epoch 8623/10000
7419  - 0s - loss: 1.6691e-04 - mean_absolute_error: 0.0042 -
     val_loss: 32.1460 - val_mean_absolute_error: 3.6122
7420 epoch_end_callback epoch 8622 lr 7.8125e-06
7421 Epoch 8624/10000
7422  - 0s - loss: 1.7563e-04 - mean_absolute_error: 0.0046 -
     val_loss: 32.1541 - val_mean_absolute_error: 3.6125
7423 epoch_end_callback epoch 8623 lr 7.8125e-06
7424 Epoch 8625/10000
7425  - 0s - loss: 1.7540e-04 - mean_absolute_error: 0.0046 -
     val_loss: 32.1301 - val_mean_absolute_error: 3.6114
7426 epoch_end_callback epoch 8624 lr 7.8125e-06
7427 Epoch 8626/10000
7428  - 0s - loss: 1.7699e-04 - mean_absolute_error: 0.0044 -
     val_loss: 32.1369 - val_mean_absolute_error: 3.6119
7429 epoch_end_callback epoch 8625 lr 7.8125e-06
7430 Epoch 8627/10000
7431  - 0s - loss: 1.7615e-04 - mean_absolute_error: 0.0043 -
     val_loss: 32.1577 - val_mean_absolute_error: 3.6118
7432 epoch_end_callback epoch 8626 lr 7.8125e-06
7433 Epoch 8628/10000
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7434    - 0s - loss: 1.6534e-04 - mean_absolute_error: 0.0046 -
        val_loss: 32.1397 - val_mean_absolute_error: 3.6120
7435  epoch_end_callback epoch 8627 lr 7.8125e-06
7436  Epoch 8629/10000
7437    - 0s - loss: 1.5927e-04 - mean_absolute_error: 0.0038 -
        val_loss: 32.1366 - val_mean_absolute_error: 3.6116
7438  epoch_end_callback epoch 8628 lr 7.8125e-06
7439  Epoch 8630/10000
7440    - 0s - loss: 1.7377e-04 - mean_absolute_error: 0.0042 -
        val_loss: 32.1332 - val_mean_absolute_error: 3.6115
7441
7442  Epoch 08630: saving model to ./model/
        model_Epoch8630_val_mean_absolute_error3.611.h5
7443  epoch_end_callback epoch 8629 lr 7.8125e-06
7444  Epoch 8631/10000
7445    - 0s - loss: 1.8845e-04 - mean_absolute_error: 0.0049 -
        val_loss: 32.1325 - val_mean_absolute_error: 3.6116
7446  epoch_end_callback epoch 8630 lr 7.8125e-06
7447  Epoch 8632/10000
7448    - 0s - loss: 1.6624e-04 - mean_absolute_error: 0.0043 -
        val_loss: 32.1379 - val_mean_absolute_error: 3.6120
7449  epoch_end_callback epoch 8631 lr 7.8125e-06
7450  Epoch 8633/10000
7451    - 0s - loss: 1.7017e-04 - mean_absolute_error: 0.0046 -
        val_loss: 32.1311 - val_mean_absolute_error: 3.6113
7452  epoch_end_callback epoch 8632 lr 7.8125e-06
7453  Epoch 8634/10000
7454    - 0s - loss: 1.6570e-04 - mean_absolute_error: 0.0039 -
        val_loss: 32.1425 - val_mean_absolute_error: 3.6124
7455  epoch_end_callback epoch 8633 lr 7.8125e-06
7456  Epoch 8635/10000
7457    - 0s - loss: 1.7812e-04 - mean_absolute_error: 0.0047 -
        val_loss: 32.1455 - val_mean_absolute_error: 3.6127
7458  epoch_end_callback epoch 8634 lr 7.8125e-06
7459  Epoch 8636/10000
7460    - 0s - loss: 1.7460e-04 - mean_absolute_error: 0.0051 -
        val_loss: 32.1498 - val_mean_absolute_error: 3.6115
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7461  epoch_end_callback epoch 8635 lr 7.8125e-06
7462  Epoch 8637/10000
7463   - 0s - loss: 1.7854e-04 - mean_absolute_error: 0.0038 -
      val_loss: 32.1410 - val_mean_absolute_error: 3.6115
7464  epoch_end_callback epoch 8636 lr 7.8125e-06
7465  Epoch 8638/10000
7466   - 0s - loss: 1.7514e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1497 - val_mean_absolute_error: 3.6123
7467  epoch_end_callback epoch 8637 lr 7.8125e-06
7468  Epoch 8639/10000
7469   - 0s - loss: 1.6902e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1369 - val_mean_absolute_error: 3.6118
7470  epoch_end_callback epoch 8638 lr 7.8125e-06
7471  Epoch 8640/10000
7472   - 0s - loss: 1.5454e-04 - mean_absolute_error: 0.0041 -
      val_loss: 32.1419 - val_mean_absolute_error: 3.6117
7473
7474  Epoch 08640: saving model to ./model/
      model_Epoch8640_val_mean_absolute_error3.612.h5
7475  epoch_end_callback epoch 8639 lr 7.8125e-06
7476  Epoch 8641/10000
7477   - 0s - loss: 1.8029e-04 - mean_absolute_error: 0.0050 -
      val_loss: 32.1340 - val_mean_absolute_error: 3.6114
7478  epoch_end_callback epoch 8640 lr 7.8125e-06
7479  Epoch 8642/10000
7480   - 0s - loss: 1.8351e-04 - mean_absolute_error: 0.0047 -
      val_loss: 32.1421 - val_mean_absolute_error: 3.6121
7481  epoch_end_callback epoch 8641 lr 7.8125e-06
7482  Epoch 8643/10000
7483   - 0s - loss: 1.8508e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1440 - val_mean_absolute_error: 3.6126
7484  epoch_end_callback epoch 8642 lr 7.8125e-06
7485  Epoch 8644/10000
7486   - 0s - loss: 1.6666e-04 - mean_absolute_error: 0.0035 -
      val_loss: 32.1274 - val_mean_absolute_error: 3.6117
7487  epoch_end_callback epoch 8643 lr 7.8125e-06
7488  Epoch 8645/10000
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7489   - 0s - loss: 1.7603e-04 - mean_absolute_error: 0.0047 - val_loss: 32.1321 - val_mean_absolute_error: 3.6119
7490  epoch_end_callback epoch 8644 lr 7.8125e-06
7491  Epoch 8646/10000
7492   - 0s - loss: 1.8509e-04 - mean_absolute_error: 0.0041 - val_loss: 32.1362 - val_mean_absolute_error: 3.6120
7493  epoch_end_callback epoch 8645 lr 7.8125e-06
7494  Epoch 8647/10000
7495   - 0s - loss: 1.6056e-04 - mean_absolute_error: 0.0041 - val_loss: 32.1494 - val_mean_absolute_error: 3.6126
7496  epoch_end_callback epoch 8646 lr 7.8125e-06
7497  Epoch 8648/10000
7498   - 0s - loss: 1.8736e-04 - mean_absolute_error: 0.0049 - val_loss: 32.1330 - val_mean_absolute_error: 3.6119
7499  epoch_end_callback epoch 8647 lr 7.8125e-06
7500  Epoch 8649/10000
7501   - 0s - loss: 1.7420e-04 - mean_absolute_error: 0.0045 - val_loss: 32.1406 - val_mean_absolute_error: 3.6127
7502  epoch_end_callback epoch 8648 lr 7.8125e-06
7503  Epoch 8650/10000
7504   - 0s - loss: 1.6754e-04 - mean_absolute_error: 0.0045 - val_loss: 32.1588 - val_mean_absolute_error: 3.6122
7505
7506  Epoch 08650: saving model to ./model/
      model_Epoch8650_val_mean_absolute_error3.612.h5
7507  epoch_end_callback epoch 8649 lr 7.8125e-06
7508  Epoch 8651/10000
7509   - 0s - loss: 1.6988e-04 - mean_absolute_error: 0.0045 - val_loss: 32.1495 - val_mean_absolute_error: 3.6128
7510  epoch_end_callback epoch 8650 lr 7.8125e-06
7511  Epoch 8652/10000
7512   - 0s - loss: 1.8247e-04 - mean_absolute_error: 0.0047 - val_loss: 32.1310 - val_mean_absolute_error: 3.6113
7513  epoch_end_callback epoch 8651 lr 7.8125e-06
7514  Epoch 8653/10000
7515   - 0s - loss: 1.7367e-04 - mean_absolute_error: 0.0044 - val_loss: 32.1473 - val_mean_absolute_error: 3.6124
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7516 epoch_end_callback epoch 8652 lr 7.8125e-06
7517 Epoch 8654/10000
7518  - 0s - loss: 1.7477e-04 - mean_absolute_error: 0.0046 -
     val_loss: 32.1469 - val_mean_absolute_error: 3.6122
7519 epoch_end_callback epoch 8653 lr 7.8125e-06
7520 Epoch 8655/10000
7521  - 0s - loss: 1.7573e-04 - mean_absolute_error: 0.0042 -
     val_loss: 32.1479 - val_mean_absolute_error: 3.6118
7522 epoch_end_callback epoch 8654 lr 7.8125e-06
7523 Epoch 8656/10000
7524  - 0s - loss: 1.6317e-04 - mean_absolute_error: 0.0040 -
     val_loss: 32.1478 - val_mean_absolute_error: 3.6125
7525 epoch_end_callback epoch 8655 lr 7.8125e-06
7526 Epoch 8657/10000
7527  - 0s - loss: 1.7260e-04 - mean_absolute_error: 0.0045 -
     val_loss: 32.1370 - val_mean_absolute_error: 3.6120
7528 epoch_end_callback epoch 8656 lr 7.8125e-06
7529 Epoch 8658/10000
7530  - 0s - loss: 1.6645e-04 - mean_absolute_error: 0.0042 -
     val_loss: 32.1403 - val_mean_absolute_error: 3.6121
7531 epoch_end_callback epoch 8657 lr 7.8125e-06
7532 Epoch 8659/10000
7533  - 0s - loss: 1.7346e-04 - mean_absolute_error: 0.0045 -
     val_loss: 32.1391 - val_mean_absolute_error: 3.6119
7534 epoch_end_callback epoch 8658 lr 7.8125e-06
7535 Epoch 8660/10000
7536  - 0s - loss: 1.6909e-04 - mean_absolute_error: 0.0043 -
     val_loss: 32.1357 - val_mean_absolute_error: 3.6114
7537
7538 Epoch 08660: saving model to ./model/
     model_Epoch8660_val_mean_absolute_error3.611.h5
7539 epoch_end_callback epoch 8659 lr 7.8125e-06
7540 Epoch 8661/10000
7541  - 0s - loss: 1.7962e-04 - mean_absolute_error: 0.0047 -
     val_loss: 32.1528 - val_mean_absolute_error: 3.6131
7542 epoch_end_callback epoch 8660 lr 7.8125e-06
7543 Epoch 8662/10000
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7544   - 0s - loss: 1.6458e-04 - mean_absolute_error: 0.0046 -
       val_loss: 32.1549 - val_mean_absolute_error: 3.6128
7545 epoch_end_callback epoch 8661 lr 7.8125e-06
7546 Epoch 8663/10000
7547   - 0s - loss: 1.7605e-04 - mean_absolute_error: 0.0043 -
       val_loss: 32.1368 - val_mean_absolute_error: 3.6125
7548 epoch_end_callback epoch 8662 lr 7.8125e-06
7549 Epoch 8664/10000
7550   - 0s - loss: 1.7491e-04 - mean_absolute_error: 0.0044 -
       val_loss: 32.1431 - val_mean_absolute_error: 3.6122
7551 epoch_end_callback epoch 8663 lr 7.8125e-06
7552 Epoch 8665/10000
7553   - 0s - loss: 1.4827e-04 - mean_absolute_error: 0.0040 -
       val_loss: 32.1341 - val_mean_absolute_error: 3.6118
7554 epoch_end_callback epoch 8664 lr 7.8125e-06
7555 Epoch 8666/10000
7556   - 0s - loss: 1.8260e-04 - mean_absolute_error: 0.0053 -
       val_loss: 32.1305 - val_mean_absolute_error: 3.6125
7557 epoch_end_callback epoch 8665 lr 7.8125e-06
7558 Epoch 8667/10000
7559   - 0s - loss: 1.7380e-04 - mean_absolute_error: 0.0046 -
       val_loss: 32.1389 - val_mean_absolute_error: 3.6119
7560 epoch_end_callback epoch 8666 lr 7.8125e-06
7561 Epoch 8668/10000
7562   - 0s - loss: 1.7833e-04 - mean_absolute_error: 0.0045 -
       val_loss: 32.1425 - val_mean_absolute_error: 3.6120
7563 epoch_end_callback epoch 8667 lr 7.8125e-06
7564 Epoch 8669/10000
7565   - 0s - loss: 1.7195e-04 - mean_absolute_error: 0.0043 -
       val_loss: 32.1389 - val_mean_absolute_error: 3.6115
7566 epoch_end_callback epoch 8668 lr 7.8125e-06
7567 Epoch 8670/10000
7568   - 0s - loss: 1.6439e-04 - mean_absolute_error: 0.0041 -
       val_loss: 32.1474 - val_mean_absolute_error: 3.6129
7569
7570 Epoch 08670: saving model to ./model/
       model_Epoch8670_val_mean_absolute_error3.613.h5
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7571  epoch_end_callback epoch 8669 lr 7.8125e-06
7572  Epoch 8671/10000
7573   - 0s - loss: 1.6757e-04 - mean_absolute_error: 0.0047 -
      val_loss: 32.1388 - val_mean_absolute_error: 3.6124
7574  epoch_end_callback epoch 8670 lr 7.8125e-06
7575  Epoch 8672/10000
7576   - 0s - loss: 1.7599e-04 - mean_absolute_error: 0.0046 -
      val_loss: 32.1451 - val_mean_absolute_error: 3.6123
7577  epoch_end_callback epoch 8671 lr 7.8125e-06
7578  Epoch 8673/10000
7579   - 0s - loss: 1.8348e-04 - mean_absolute_error: 0.0041 -
      val_loss: 32.1350 - val_mean_absolute_error: 3.6120
7580  epoch_end_callback epoch 8672 lr 7.8125e-06
7581  Epoch 8674/10000
7582   - 0s - loss: 1.6791e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1556 - val_mean_absolute_error: 3.6127
7583  epoch_end_callback epoch 8673 lr 7.8125e-06
7584  Epoch 8675/10000
7585   - 0s - loss: 1.8562e-04 - mean_absolute_error: 0.0047 -
      val_loss: 32.1443 - val_mean_absolute_error: 3.6126
7586  epoch_end_callback epoch 8674 lr 7.8125e-06
7587  Epoch 8676/10000
7588   - 0s - loss: 1.7128e-04 - mean_absolute_error: 0.0040 -
      val_loss: 32.1456 - val_mean_absolute_error: 3.6124
7589  epoch_end_callback epoch 8675 lr 7.8125e-06
7590  Epoch 8677/10000
7591   - 0s - loss: 1.8007e-04 - mean_absolute_error: 0.0038 -
      val_loss: 32.1419 - val_mean_absolute_error: 3.6120
7592  epoch_end_callback epoch 8676 lr 7.8125e-06
7593  Epoch 8678/10000
7594   - 0s - loss: 1.4854e-04 - mean_absolute_error: 0.0035 -
      val_loss: 32.1359 - val_mean_absolute_error: 3.6122
7595  epoch_end_callback epoch 8677 lr 7.8125e-06
7596  Epoch 8679/10000
7597   - 0s - loss: 1.6780e-04 - mean_absolute_error: 0.0037 -
      val_loss: 32.1364 - val_mean_absolute_error: 3.6119
7598  epoch_end_callback epoch 8678 lr 7.8125e-06
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7599  Epoch 8680/10000
7600   - 0s - loss: 1.8105e-04 - mean_absolute_error: 0.0045 -
       val_loss: 32.1414 - val_mean_absolute_error: 3.6121
7601
7602  Epoch 08680: saving model to ./model/
       model_Epoch8680_val_mean_absolute_error3.612.h5
7603  epoch_end_callback epoch 8679 lr 7.8125e-06
7604  Epoch 8681/10000
7605   - 0s - loss: 1.7008e-04 - mean_absolute_error: 0.0041 -
       val_loss: 32.1354 - val_mean_absolute_error: 3.6116
7606  epoch_end_callback epoch 8680 lr 7.8125e-06
7607  Epoch 8682/10000
7608   - 0s - loss: 1.7705e-04 - mean_absolute_error: 0.0045 -
       val_loss: 32.1383 - val_mean_absolute_error: 3.6119
7609  epoch_end_callback epoch 8681 lr 7.8125e-06
7610  Epoch 8683/10000
7611   - 0s - loss: 1.6567e-04 - mean_absolute_error: 0.0043 -
       val_loss: 32.1540 - val_mean_absolute_error: 3.6133
7612  epoch_end_callback epoch 8682 lr 7.8125e-06
7613  Epoch 8684/10000
7614   - 0s - loss: 1.7543e-04 - mean_absolute_error: 0.0046 -
       val_loss: 32.1448 - val_mean_absolute_error: 3.6119
7615  epoch_end_callback epoch 8683 lr 7.8125e-06
7616  Epoch 8685/10000
7617   - 0s - loss: 1.7243e-04 - mean_absolute_error: 0.0043 -
       val_loss: 32.1451 - val_mean_absolute_error: 3.6118
7618  epoch_end_callback epoch 8684 lr 7.8125e-06
7619  Epoch 8686/10000
7620   - 0s - loss: 1.7634e-04 - mean_absolute_error: 0.0045 -
       val_loss: 32.1550 - val_mean_absolute_error: 3.6123
7621  epoch_end_callback epoch 8685 lr 7.8125e-06
7622  Epoch 8687/10000
7623   - 0s - loss: 1.8665e-04 - mean_absolute_error: 0.0047 -
       val_loss: 32.1451 - val_mean_absolute_error: 3.6120
7624  epoch_end_callback epoch 8686 lr 7.8125e-06
7625  Epoch 8688/10000
7626   - 0s - loss: 1.7170e-04 - mean_absolute_error: 0.0042 -
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7626  val_loss: 32.1486 - val_mean_absolute_error: 3.6122
7627  epoch_end_callback epoch 8687 lr 7.8125e-06
7628  Epoch 8689/10000
7629   - 0s - loss: 1.6015e-04 - mean_absolute_error: 0.0041 -
      val_loss: 32.1399 - val_mean_absolute_error: 3.6119
7630  epoch_end_callback epoch 8688 lr 7.8125e-06
7631  Epoch 8690/10000
7632   - 0s - loss: 1.6981e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1364 - val_mean_absolute_error: 3.6117
7633
7634  Epoch 08690: saving model to ./model/
      model_Epoch8690_val_mean_absolute_error3.612.h5
7635  epoch_end_callback epoch 8689 lr 7.8125e-06
7636  Epoch 8691/10000
7637   - 0s - loss: 1.7344e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1378 - val_mean_absolute_error: 3.6118
7638  epoch_end_callback epoch 8690 lr 7.8125e-06
7639  Epoch 8692/10000
7640   - 0s - loss: 1.6392e-04 - mean_absolute_error: 0.0039 -
      val_loss: 32.1401 - val_mean_absolute_error: 3.6124
7641  epoch_end_callback epoch 8691 lr 7.8125e-06
7642  Epoch 8693/10000
7643   - 0s - loss: 1.8021e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1362 - val_mean_absolute_error: 3.6116
7644  epoch_end_callback epoch 8692 lr 7.8125e-06
7645  Epoch 8694/10000
7646   - 0s - loss: 1.8016e-04 - mean_absolute_error: 0.0046 -
      val_loss: 32.1433 - val_mean_absolute_error: 3.6125
7647  epoch_end_callback epoch 8693 lr 7.8125e-06
7648  Epoch 8695/10000
7649   - 0s - loss: 1.7094e-04 - mean_absolute_error: 0.0040 -
      val_loss: 32.1434 - val_mean_absolute_error: 3.6113
7650  epoch_end_callback epoch 8694 lr 7.8125e-06
7651  Epoch 8696/10000
7652   - 0s - loss: 1.7418e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1574 - val_mean_absolute_error: 3.6123
7653  epoch_end_callback epoch 8695 lr 7.8125e-06
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7654  Epoch 8697/10000
7655   - 0s - loss: 1.7274e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1554 - val_mean_absolute_error: 3.6128
7656  epoch_end_callback epoch 8696 lr 7.8125e-06
7657  Epoch 8698/10000
7658   - 0s - loss: 1.7359e-04 - mean_absolute_error: 0.0048 -
      val_loss: 32.1316 - val_mean_absolute_error: 3.6123
7659  epoch_end_callback epoch 8697 lr 7.8125e-06
7660  Epoch 8699/10000
7661   - 0s - loss: 1.6057e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1440 - val_mean_absolute_error: 3.6122
7662  epoch_end_callback epoch 8698 lr 7.8125e-06
7663  Epoch 8700/10000
7664   - 0s - loss: 1.7351e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1395 - val_mean_absolute_error: 3.6119
7665
7666  Epoch 08700: saving model to ./model/
      model_Epoch8700_val_mean_absolute_error3.612.h5
7667  epoch_end_callback epoch 8699 lr 7.8125e-06
7668  Epoch 8701/10000
7669   - 0s - loss: 1.7571e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1322 - val_mean_absolute_error: 3.6115
7670  epoch_end_callback epoch 8700 lr 7.8125e-06
7671  Epoch 8702/10000
7672   - 0s - loss: 1.8054e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1406 - val_mean_absolute_error: 3.6124
7673  epoch_end_callback epoch 8701 lr 7.8125e-06
7674  Epoch 8703/10000
7675   - 0s - loss: 1.7535e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1271 - val_mean_absolute_error: 3.6120
7676  epoch_end_callback epoch 8702 lr 7.8125e-06
7677  Epoch 8704/10000
7678   - 0s - loss: 1.7211e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1345 - val_mean_absolute_error: 3.6117
7679  epoch_end_callback epoch 8703 lr 7.8125e-06
7680  Epoch 8705/10000
7681   - 0s - loss: 1.7550e-04 - mean_absolute_error: 0.0040 -
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7681  val_loss: 32.1406 - val_mean_absolute_error: 3.6124
7682  epoch_end_callback epoch 8704 lr 7.8125e-06
7683  Epoch 8706/10000
7684   - 0s - loss: 1.7363e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1398 - val_mean_absolute_error: 3.6123
7685  epoch_end_callback epoch 8705 lr 7.8125e-06
7686  Epoch 8707/10000
7687   - 0s - loss: 1.5028e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1441 - val_mean_absolute_error: 3.6122
7688  epoch_end_callback epoch 8706 lr 7.8125e-06
7689  Epoch 8708/10000
7690   - 0s - loss: 1.6796e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1416 - val_mean_absolute_error: 3.6134
7691  epoch_end_callback epoch 8707 lr 7.8125e-06
7692  Epoch 8709/10000
7693   - 0s - loss: 1.7451e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1431 - val_mean_absolute_error: 3.6124
7694  epoch_end_callback epoch 8708 lr 7.8125e-06
7695  Epoch 8710/10000
7696   - 0s - loss: 1.8097e-04 - mean_absolute_error: 0.0048 -
      val_loss: 32.1285 - val_mean_absolute_error: 3.6117
7697
7698  Epoch 08710: saving model to ./model/
      model_Epoch8710_val_mean_absolute_error3.612.h5
7699  epoch_end_callback epoch 8709 lr 7.8125e-06
7700  Epoch 8711/10000
7701   - 0s - loss: 1.8744e-04 - mean_absolute_error: 0.0041 -
      val_loss: 32.1398 - val_mean_absolute_error: 3.6127
7702  epoch_end_callback epoch 8710 lr 7.8125e-06
7703  Epoch 8712/10000
7704   - 0s - loss: 1.6191e-04 - mean_absolute_error: 0.0039 -
      val_loss: 32.1473 - val_mean_absolute_error: 3.6122
7705  epoch_end_callback epoch 8711 lr 7.8125e-06
7706  Epoch 8713/10000
7707   - 0s - loss: 1.7718e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1461 - val_mean_absolute_error: 3.6135
7708  epoch_end_callback epoch 8712 lr 7.8125e-06
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7709 Epoch 8714/10000
7710  - 0s - loss: 1.6853e-04 - mean_absolute_error: 0.0046 -
     val_loss: 32.1277 - val_mean_absolute_error: 3.6114
7711 epoch_end_callback epoch 8713 lr 7.8125e-06
7712 Epoch 8715/10000
7713  - 0s - loss: 1.6701e-04 - mean_absolute_error: 0.0043 -
     val_loss: 32.1330 - val_mean_absolute_error: 3.6121
7714 epoch_end_callback epoch 8714 lr 7.8125e-06
7715 Epoch 8716/10000
7716  - 0s - loss: 1.6420e-04 - mean_absolute_error: 0.0047 -
     val_loss: 32.1513 - val_mean_absolute_error: 3.6127
7717 epoch_end_callback epoch 8715 lr 7.8125e-06
7718 Epoch 8717/10000
7719  - 0s - loss: 1.6868e-04 - mean_absolute_error: 0.0043 -
     val_loss: 32.1502 - val_mean_absolute_error: 3.6130
7720 epoch_end_callback epoch 8716 lr 7.8125e-06
7721 Epoch 8718/10000
7722  - 0s - loss: 1.9060e-04 - mean_absolute_error: 0.0047 -
     val_loss: 32.1415 - val_mean_absolute_error: 3.6120
7723 epoch_end_callback epoch 8717 lr 7.8125e-06
7724 Epoch 8719/10000
7725  - 0s - loss: 1.5633e-04 - mean_absolute_error: 0.0045 -
     val_loss: 32.1411 - val_mean_absolute_error: 3.6119
7726 epoch_end_callback epoch 8718 lr 7.8125e-06
7727 Epoch 8720/10000
7728  - 0s - loss: 1.7823e-04 - mean_absolute_error: 0.0046 -
     val_loss: 32.1396 - val_mean_absolute_error: 3.6122
7729
7730 Epoch 08720: saving model to ./model/
     model_Epoch8720_val_mean_absolute_error3.612.h5
7731 epoch_end_callback epoch 8719 lr 7.8125e-06
7732 Epoch 8721/10000
7733  - 0s - loss: 1.7326e-04 - mean_absolute_error: 0.0039 -
     val_loss: 32.1463 - val_mean_absolute_error: 3.6121
7734 epoch_end_callback epoch 8720 lr 7.8125e-06
7735 Epoch 8722/10000
7736  - 0s - loss: 1.7304e-04 - mean_absolute_error: 0.0045 -
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7736 val_loss: 32.1406 - val_mean_absolute_error: 3.6126
7737 epoch_end_callback epoch 8721 lr 7.8125e-06
7738 Epoch 8723/10000
7739 - 0s - loss: 1.7478e-04 - mean_absolute_error: 0.0042 - val_loss: 32.1445 - val_mean_absolute_error: 3.6120
7740 epoch_end_callback epoch 8722 lr 7.8125e-06
7741 Epoch 8724/10000
7742 - 0s - loss: 1.7361e-04 - mean_absolute_error: 0.0043 - val_loss: 32.1287 - val_mean_absolute_error: 3.6124
7743 epoch_end_callback epoch 8723 lr 7.8125e-06
7744 Epoch 8725/10000
7745 - 0s - loss: 1.4610e-04 - mean_absolute_error: 0.0041 - val_loss: 32.1328 - val_mean_absolute_error: 3.6124
7746 epoch_end_callback epoch 8724 lr 7.8125e-06
7747 Epoch 8726/10000
7748 - 0s - loss: 1.8496e-04 - mean_absolute_error: 0.0051 - val_loss: 32.1274 - val_mean_absolute_error: 3.6109
7749 epoch_end_callback epoch 8725 lr 7.8125e-06
7750 Epoch 8727/10000
7751 - 0s - loss: 1.6826e-04 - mean_absolute_error: 0.0043 - val_loss: 32.1513 - val_mean_absolute_error: 3.6130
7752 epoch_end_callback epoch 8726 lr 7.8125e-06
7753 Epoch 8728/10000
7754 - 0s - loss: 1.7189e-04 - mean_absolute_error: 0.0043 - val_loss: 32.1413 - val_mean_absolute_error: 3.6118
7755 epoch_end_callback epoch 8727 lr 7.8125e-06
7756 Epoch 8729/10000
7757 - 0s - loss: 1.5982e-04 - mean_absolute_error: 0.0041 - val_loss: 32.1228 - val_mean_absolute_error: 3.6125
7758 epoch_end_callback epoch 8728 lr 7.8125e-06
7759 Epoch 8730/10000
7760 - 0s - loss: 1.7637e-04 - mean_absolute_error: 0.0046 - val_loss: 32.1416 - val_mean_absolute_error: 3.6122
7761
7762 Epoch 08730: saving model to ./model/ model_Epoch8730_val_mean_absolute_error3.612.h5
7763 epoch_end_callback epoch 8729 lr 7.8125e-06

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7764  Epoch 8731/10000
7765   - 0s - loss: 1.6749e-04 - mean_absolute_error: 0.0044 - val_loss: 32.1442 - val_mean_absolute_error: 3.6115
7766  epoch_end_callback epoch 8730 lr 7.8125e-06
7767  Epoch 8732/10000
7768   - 0s - loss: 1.8315e-04 - mean_absolute_error: 0.0043 - val_loss: 32.1392 - val_mean_absolute_error: 3.6122
7769  epoch_end_callback epoch 8731 lr 7.8125e-06
7770  Epoch 8733/10000
7771   - 0s - loss: 1.6840e-04 - mean_absolute_error: 0.0041 - val_loss: 32.1455 - val_mean_absolute_error: 3.6120
7772  epoch_end_callback epoch 8732 lr 7.8125e-06
7773  Epoch 8734/10000
7774   - 0s - loss: 1.6977e-04 - mean_absolute_error: 0.0042 - val_loss: 32.1489 - val_mean_absolute_error: 3.6121
7775  epoch_end_callback epoch 8733 lr 7.8125e-06
7776  Epoch 8735/10000
7777   - 0s - loss: 1.6379e-04 - mean_absolute_error: 0.0045 - val_loss: 32.1545 - val_mean_absolute_error: 3.6123
7778  epoch_end_callback epoch 8734 lr 7.8125e-06
7779  Epoch 8736/10000
7780   - 0s - loss: 1.6837e-04 - mean_absolute_error: 0.0043 - val_loss: 32.1472 - val_mean_absolute_error: 3.6121
7781  epoch_end_callback epoch 8735 lr 7.8125e-06
7782  Epoch 8737/10000
7783   - 0s - loss: 1.8657e-04 - mean_absolute_error: 0.0044 - val_loss: 32.1361 - val_mean_absolute_error: 3.6120
7784  epoch_end_callback epoch 8736 lr 7.8125e-06
7785  Epoch 8738/10000
7786   - 0s - loss: 1.6447e-04 - mean_absolute_error: 0.0043 - val_loss: 32.1277 - val_mean_absolute_error: 3.6114
7787  epoch_end_callback epoch 8737 lr 7.8125e-06
7788  Epoch 8739/10000
7789   - 0s - loss: 1.7008e-04 - mean_absolute_error: 0.0041 - val_loss: 32.1306 - val_mean_absolute_error: 3.6115
7790  epoch_end_callback epoch 8738 lr 7.8125e-06
7791  Epoch 8740/10000
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7792    - 0s - loss: 1.7098e-04 - mean_absolute_error: 0.0046 -
        val_loss: 32.1456 - val_mean_absolute_error: 3.6120
7793
7794   Epoch 08740: saving model to ./model/
       model_Epoch8740_val_mean_absolute_error3.612.h5
7795   epoch_end_callback epoch 8739 lr 7.8125e-06
7796   Epoch 8741/10000
7797    - 0s - loss: 1.6828e-04 - mean_absolute_error: 0.0042 -
        val_loss: 32.1450 - val_mean_absolute_error: 3.6121
7798   epoch_end_callback epoch 8740 lr 7.8125e-06
7799   Epoch 8742/10000
7800    - 0s - loss: 1.7654e-04 - mean_absolute_error: 0.0043 -
        val_loss: 32.1439 - val_mean_absolute_error: 3.6114
7801   epoch_end_callback epoch 8741 lr 7.8125e-06
7802   Epoch 8743/10000
7803    - 0s - loss: 1.6587e-04 - mean_absolute_error: 0.0044 -
        val_loss: 32.1438 - val_mean_absolute_error: 3.6125
7804   epoch_end_callback epoch 8742 lr 7.8125e-06
7805   Epoch 8744/10000
7806    - 0s - loss: 1.7279e-04 - mean_absolute_error: 0.0046 -
        val_loss: 32.1432 - val_mean_absolute_error: 3.6121
7807   epoch_end_callback epoch 8743 lr 7.8125e-06
7808   Epoch 8745/10000
7809    - 0s - loss: 1.7343e-04 - mean_absolute_error: 0.0039 -
        val_loss: 32.1325 - val_mean_absolute_error: 3.6121
7810   epoch_end_callback epoch 8744 lr 7.8125e-06
7811   Epoch 8746/10000
7812    - 0s - loss: 1.7839e-04 - mean_absolute_error: 0.0042 -
        val_loss: 32.1456 - val_mean_absolute_error: 3.6119
7813   epoch_end_callback epoch 8745 lr 7.8125e-06
7814   Epoch 8747/10000
7815    - 0s - loss: 1.6453e-04 - mean_absolute_error: 0.0044 -
        val_loss: 32.1510 - val_mean_absolute_error: 3.6129
7816   epoch_end_callback epoch 8746 lr 7.8125e-06
7817   Epoch 8748/10000
7818    - 0s - loss: 1.6728e-04 - mean_absolute_error: 0.0045 -
        val_loss: 32.1558 - val_mean_absolute_error: 3.6126
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7819  epoch_end_callback epoch 8747 lr 7.8125e-06
7820  Epoch 8749/10000
7821   - 0s - loss: 1.6226e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1507 - val_mean_absolute_error: 3.6120
7822  epoch_end_callback epoch 8748 lr 7.8125e-06
7823  Epoch 8750/10000
7824   - 0s - loss: 1.7962e-04 - mean_absolute_error: 0.0050 -
      val_loss: 32.1462 - val_mean_absolute_error: 3.6123
7825
7826  Epoch 08750: saving model to ./model/
      model_Epoch8750_val_mean_absolute_error3.612.h5
7827  epoch_end_callback epoch 8749 lr 7.8125e-06
7828  Epoch 8751/10000
7829   - 0s - loss: 1.7545e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1465 - val_mean_absolute_error: 3.6125
7830  epoch_end_callback epoch 8750 lr 7.8125e-06
7831  Epoch 8752/10000
7832   - 0s - loss: 1.8076e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1421 - val_mean_absolute_error: 3.6121
7833  epoch_end_callback epoch 8751 lr 7.8125e-06
7834  Epoch 8753/10000
7835   - 0s - loss: 1.4107e-04 - mean_absolute_error: 0.0035 -
      val_loss: 32.1433 - val_mean_absolute_error: 3.6121
7836  epoch_end_callback epoch 8752 lr 7.8125e-06
7837  Epoch 8754/10000
7838   - 0s - loss: 1.6584e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1207 - val_mean_absolute_error: 3.6132
7839  epoch_end_callback epoch 8753 lr 7.8125e-06
7840  Epoch 8755/10000
7841   - 0s - loss: 1.8790e-04 - mean_absolute_error: 0.0050 -
      val_loss: 32.1400 - val_mean_absolute_error: 3.6122
7842  epoch_end_callback epoch 8754 lr 7.8125e-06
7843  Epoch 8756/10000
7844   - 0s - loss: 1.5858e-04 - mean_absolute_error: 0.0038 -
      val_loss: 32.1371 - val_mean_absolute_error: 3.6119
7845  epoch_end_callback epoch 8755 lr 7.8125e-06
7846  Epoch 8757/10000
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7847    - 0s - loss: 1.6171e-04 - mean_absolute_error: 0.0044 -
        val_loss: 32.1591 - val_mean_absolute_error: 3.6136
7848  epoch_end_callback epoch 8756 lr 7.8125e-06
7849  Epoch 8758/10000
7850    - 0s - loss: 1.6594e-04 - mean_absolute_error: 0.0044 -
        val_loss: 32.1414 - val_mean_absolute_error: 3.6117
7851  epoch_end_callback epoch 8757 lr 7.8125e-06
7852  Epoch 8759/10000
7853    - 0s - loss: 1.7486e-04 - mean_absolute_error: 0.0045 -
        val_loss: 32.1442 - val_mean_absolute_error: 3.6125
7854  epoch_end_callback epoch 8758 lr 7.8125e-06
7855  Epoch 8760/10000
7856    - 0s - loss: 1.6986e-04 - mean_absolute_error: 0.0045 -
        val_loss: 32.1488 - val_mean_absolute_error: 3.6125
7857
7858  Epoch 08760: saving model to ./model/
        model_Epoch8760_val_mean_absolute_error3.613.h5
7859  epoch_end_callback epoch 8759 lr 7.8125e-06
7860  Epoch 8761/10000
7861    - 0s - loss: 1.6480e-04 - mean_absolute_error: 0.0044 -
        val_loss: 32.1425 - val_mean_absolute_error: 3.6119
7862  epoch_end_callback epoch 8760 lr 7.8125e-06
7863  Epoch 8762/10000
7864    - 0s - loss: 1.7035e-04 - mean_absolute_error: 0.0046 -
        val_loss: 32.1457 - val_mean_absolute_error: 3.6132
7865  epoch_end_callback epoch 8761 lr 7.8125e-06
7866  Epoch 8763/10000
7867    - 0s - loss: 1.6001e-04 - mean_absolute_error: 0.0044 -
        val_loss: 32.1436 - val_mean_absolute_error: 3.6122
7868  epoch_end_callback epoch 8762 lr 7.8125e-06
7869  Epoch 8764/10000
7870    - 0s - loss: 1.7998e-04 - mean_absolute_error: 0.0047 -
        val_loss: 32.1503 - val_mean_absolute_error: 3.6128
7871  epoch_end_callback epoch 8763 lr 7.8125e-06
7872  Epoch 8765/10000
7873    - 0s - loss: 1.5860e-04 - mean_absolute_error: 0.0039 -
        val_loss: 32.1327 - val_mean_absolute_error: 3.6118
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7874  epoch_end_callback epoch 8764 lr 7.8125e-06
7875  Epoch 8766/10000
7876   - 0s - loss: 1.7238e-04 - mean_absolute_error: 0.0046 -
      val_loss: 32.1403 - val_mean_absolute_error: 3.6124
7877  epoch_end_callback epoch 8765 lr 7.8125e-06
7878  Epoch 8767/10000
7879   - 0s - loss: 1.6778e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1508 - val_mean_absolute_error: 3.6123
7880  epoch_end_callback epoch 8766 lr 7.8125e-06
7881  Epoch 8768/10000
7882   - 0s - loss: 1.7205e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1474 - val_mean_absolute_error: 3.6128
7883  epoch_end_callback epoch 8767 lr 7.8125e-06
7884  Epoch 8769/10000
7885   - 0s - loss: 1.6330e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1260 - val_mean_absolute_error: 3.6112
7886  epoch_end_callback epoch 8768 lr 7.8125e-06
7887  Epoch 8770/10000
7888   - 0s - loss: 1.6958e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1357 - val_mean_absolute_error: 3.6118
7889
7890  Epoch 08770: saving model to ./model/
      model_Epoch8770_val_mean_absolute_error3.612.h5
7891  epoch_end_callback epoch 8769 lr 7.8125e-06
7892  Epoch 8771/10000
7893   - 0s - loss: 1.6582e-04 - mean_absolute_error: 0.0047 -
      val_loss: 32.1578 - val_mean_absolute_error: 3.6131
7894  epoch_end_callback epoch 8770 lr 7.8125e-06
7895  Epoch 8772/10000
7896   - 0s - loss: 1.7796e-04 - mean_absolute_error: 0.0047 -
      val_loss: 32.1491 - val_mean_absolute_error: 3.6123
7897  epoch_end_callback epoch 8771 lr 7.8125e-06
7898  Epoch 8773/10000
7899   - 0s - loss: 1.6009e-04 - mean_absolute_error: 0.0041 -
      val_loss: 32.1506 - val_mean_absolute_error: 3.6125
7900  epoch_end_callback epoch 8772 lr 7.8125e-06
7901  Epoch 8774/10000
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7902   - 0s - loss: 1.7100e-04 - mean_absolute_error: 0.0047 -
       val_loss: 32.1678 - val_mean_absolute_error: 3.6132
7903 epoch_end_callback epoch 8773 lr 7.8125e-06
7904 Epoch 8775/10000
7905   - 0s - loss: 1.6034e-04 - mean_absolute_error: 0.0045 -
       val_loss: 32.1406 - val_mean_absolute_error: 3.6124
7906 epoch_end_callback epoch 8774 lr 7.8125e-06
7907 Epoch 8776/10000
7908   - 0s - loss: 1.5768e-04 - mean_absolute_error: 0.0040 -
       val_loss: 32.1329 - val_mean_absolute_error: 3.6125
7909 epoch_end_callback epoch 8775 lr 7.8125e-06
7910 Epoch 8777/10000
7911   - 0s - loss: 1.6542e-04 - mean_absolute_error: 0.0039 -
       val_loss: 32.1508 - val_mean_absolute_error: 3.6126
7912 epoch_end_callback epoch 8776 lr 7.8125e-06
7913 Epoch 8778/10000
7914   - 0s - loss: 1.6601e-04 - mean_absolute_error: 0.0047 -
       val_loss: 32.1442 - val_mean_absolute_error: 3.6123
7915 epoch_end_callback epoch 8777 lr 7.8125e-06
7916 Epoch 8779/10000
7917   - 0s - loss: 1.6584e-04 - mean_absolute_error: 0.0043 -
       val_loss: 32.1443 - val_mean_absolute_error: 3.6124
7918 epoch_end_callback epoch 8778 lr 7.8125e-06
7919 Epoch 8780/10000
7920   - 0s - loss: 1.7456e-04 - mean_absolute_error: 0.0050 -
       val_loss: 32.1394 - val_mean_absolute_error: 3.6124
7921
7922 Epoch 08780: saving model to ./model/
       model_Epoch8780_val_mean_absolute_error3.612.h5
7923 epoch_end_callback epoch 8779 lr 7.8125e-06
7924 Epoch 8781/10000
7925   - 0s - loss: 1.7053e-04 - mean_absolute_error: 0.0044 -
       val_loss: 32.1422 - val_mean_absolute_error: 3.6122
7926 epoch_end_callback epoch 8780 lr 7.8125e-06
7927 Epoch 8782/10000
7928   - 0s - loss: 1.7168e-04 - mean_absolute_error: 0.0042 -
       val_loss: 32.1538 - val_mean_absolute_error: 3.6129
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7929  epoch_end_callback epoch 8781 lr 7.8125e-06
7930  Epoch 8783/10000
7931   - 0s - loss: 1.6705e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1465 - val_mean_absolute_error: 3.6123
7932  epoch_end_callback epoch 8782 lr 7.8125e-06
7933  Epoch 8784/10000
7934   - 0s - loss: 1.7122e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1487 - val_mean_absolute_error: 3.6126
7935  epoch_end_callback epoch 8783 lr 7.8125e-06
7936  Epoch 8785/10000
7937   - 0s - loss: 1.7092e-04 - mean_absolute_error: 0.0046 -
      val_loss: 32.1417 - val_mean_absolute_error: 3.6127
7938  epoch_end_callback epoch 8784 lr 7.8125e-06
7939  Epoch 8786/10000
7940   - 0s - loss: 1.6533e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1427 - val_mean_absolute_error: 3.6120
7941  epoch_end_callback epoch 8785 lr 7.8125e-06
7942  Epoch 8787/10000
7943   - 0s - loss: 1.7103e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1374 - val_mean_absolute_error: 3.6120
7944  epoch_end_callback epoch 8786 lr 7.8125e-06
7945  Epoch 8788/10000
7946   - 0s - loss: 1.6509e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1427 - val_mean_absolute_error: 3.6120
7947  epoch_end_callback epoch 8787 lr 7.8125e-06
7948  Epoch 8789/10000
7949   - 0s - loss: 1.6452e-04 - mean_absolute_error: 0.0041 -
      val_loss: 32.1501 - val_mean_absolute_error: 3.6123
7950  epoch_end_callback epoch 8788 lr 7.8125e-06
7951  Epoch 8790/10000
7952   - 0s - loss: 1.6693e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1432 - val_mean_absolute_error: 3.6119
7953
7954  Epoch 08790: saving model to ./model/
      model_Epoch8790_val_mean_absolute_error3.612.h5
7955  epoch_end_callback epoch 8789 lr 7.8125e-06
7956  Epoch 8791/10000
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7957 - 0s - loss: 1.7087e-04 - mean_absolute_error: 0.0045 - val_loss: 32.1333 - val_mean_absolute_error: 3.6123

7958 epoch_end_callback epoch 8790 lr 7.8125e-06

7959 Epoch 8792/10000

7960 - 0s - loss: 1.6782e-04 - mean_absolute_error: 0.0047 - val_loss: 32.1409 - val_mean_absolute_error: 3.6119

7961 epoch_end_callback epoch 8791 lr 7.8125e-06

7962 Epoch 8793/10000

7963 - 0s - loss: 1.6922e-04 - mean_absolute_error: 0.0044 - val_loss: 32.1537 - val_mean_absolute_error: 3.6131

7964 epoch_end_callback epoch 8792 lr 7.8125e-06

7965 Epoch 8794/10000

7966 - 0s - loss: 1.7309e-04 - mean_absolute_error: 0.0039 - val_loss: 32.1660 - val_mean_absolute_error: 3.6131

7967 epoch_end_callback epoch 8793 lr 7.8125e-06

7968 Epoch 8795/10000

7969 - 0s - loss: 1.6668e-04 - mean_absolute_error: 0.0042 - val_loss: 32.1429 - val_mean_absolute_error: 3.6129

7970 epoch_end_callback epoch 8794 lr 7.8125e-06

7971 Epoch 8796/10000

7972 - 0s - loss: 1.6915e-04 - mean_absolute_error: 0.0045 - val_loss: 32.1559 - val_mean_absolute_error: 3.6126

7973 epoch_end_callback epoch 8795 lr 7.8125e-06

7974 Epoch 8797/10000

7975 - 0s - loss: 1.7782e-04 - mean_absolute_error: 0.0048 - val_loss: 32.1482 - val_mean_absolute_error: 3.6127

7976 epoch_end_callback epoch 8796 lr 7.8125e-06

7977 Epoch 8798/10000

7978 - 0s - loss: 1.6439e-04 - mean_absolute_error: 0.0041 - val_loss: 32.1447 - val_mean_absolute_error: 3.6124

7979 epoch_end_callback epoch 8797 lr 7.8125e-06

7980 Epoch 8799/10000

7981 - 0s - loss: 1.5669e-04 - mean_absolute_error: 0.0045 - val_loss: 32.1493 - val_mean_absolute_error: 3.6126

7982 epoch_end_callback epoch 8798 lr 7.8125e-06

7983 Epoch 8800/10000

7984 - 0s - loss: 1.6694e-04 - mean_absolute_error: 0.0041 -

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7984  val_loss: 32.1459 - val_mean_absolute_error: 3.6125
7985
7986  Epoch 08800: saving model to ./model/
      model_Epoch8800_val_mean_absolute_error3.613.h5
7987  epoch_end_callback epoch 8799 lr 7.8125e-06
7988  Epoch 8801/10000
7989   - 0s - loss: 1.6445e-04 - mean_absolute_error: 0.0041 -
      val_loss: 32.1522 - val_mean_absolute_error: 3.6118
7990  epoch_end_callback epoch 8800 lr 7.8125e-06
7991  Epoch 8802/10000
7992   - 0s - loss: 1.7032e-04 - mean_absolute_error: 0.0048 -
      val_loss: 32.1329 - val_mean_absolute_error: 3.6122
7993  epoch_end_callback epoch 8801 lr 7.8125e-06
7994  Epoch 8803/10000
7995   - 0s - loss: 1.6561e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1388 - val_mean_absolute_error: 3.6116
7996  epoch_end_callback epoch 8802 lr 7.8125e-06
7997  Epoch 8804/10000
7998   - 0s - loss: 1.6638e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1581 - val_mean_absolute_error: 3.6127
7999  epoch_end_callback epoch 8803 lr 7.8125e-06
8000  Epoch 8805/10000
8001   - 0s - loss: 1.6421e-04 - mean_absolute_error: 0.0036 -
      val_loss: 32.1435 - val_mean_absolute_error: 3.6119
8002  epoch_end_callback epoch 8804 lr 7.8125e-06
8003  Epoch 8806/10000
8004   - 0s - loss: 1.8409e-04 - mean_absolute_error: 0.0050 -
      val_loss: 32.1421 - val_mean_absolute_error: 3.6120
8005  epoch_end_callback epoch 8805 lr 7.8125e-06
8006  Epoch 8807/10000
8007   - 0s - loss: 1.6732e-04 - mean_absolute_error: 0.0041 -
      val_loss: 32.1529 - val_mean_absolute_error: 3.6130
8008  epoch_end_callback epoch 8806 lr 7.8125e-06
8009  Epoch 8808/10000
8010   - 0s - loss: 1.6767e-04 - mean_absolute_error: 0.0046 -
      val_loss: 32.1385 - val_mean_absolute_error: 3.6118
8011  epoch_end_callback epoch 8807 lr 7.8125e-06
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8012  Epoch 8809/10000
8013   - 0s - loss: 1.4263e-04 - mean_absolute_error: 0.0038 -
      val_loss: 32.1421 - val_mean_absolute_error: 3.6128
8014  epoch_end_callback epoch 8808 lr 7.8125e-06
8015  Epoch 8810/10000
8016   - 0s - loss: 1.6708e-04 - mean_absolute_error: 0.0047 -
      val_loss: 32.1433 - val_mean_absolute_error: 3.6127
8017
8018  Epoch 08810: saving model to ./model/
      model_Epoch8810_val_mean_absolute_error3.613.h5
8019  epoch_end_callback epoch 8809 lr 7.8125e-06
8020  Epoch 8811/10000
8021   - 0s - loss: 1.6308e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1546 - val_mean_absolute_error: 3.6127
8022  epoch_end_callback epoch 8810 lr 7.8125e-06
8023  Epoch 8812/10000
8024   - 0s - loss: 1.6999e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1790 - val_mean_absolute_error: 3.6135
8025  epoch_end_callback epoch 8811 lr 7.8125e-06
8026  Epoch 8813/10000
8027   - 0s - loss: 1.6464e-04 - mean_absolute_error: 0.0038 -
      val_loss: 32.1458 - val_mean_absolute_error: 3.6123
8028  epoch_end_callback epoch 8812 lr 7.8125e-06
8029  Epoch 8814/10000
8030   - 0s - loss: 1.7050e-04 - mean_absolute_error: 0.0041 -
      val_loss: 32.1466 - val_mean_absolute_error: 3.6118
8031  epoch_end_callback epoch 8813 lr 7.8125e-06
8032  Epoch 8815/10000
8033   - 0s - loss: 1.7259e-04 - mean_absolute_error: 0.0046 -
      val_loss: 32.1542 - val_mean_absolute_error: 3.6127
8034  epoch_end_callback epoch 8814 lr 7.8125e-06
8035  Epoch 8816/10000
8036   - 0s - loss: 1.6112e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1464 - val_mean_absolute_error: 3.6123
8037  epoch_end_callback epoch 8815 lr 7.8125e-06
8038  Epoch 8817/10000
8039   - 0s - loss: 1.7302e-04 - mean_absolute_error: 0.0044 -
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8039 val_loss: 32.1420 - val_mean_absolute_error: 3.6120
8040 epoch_end_callback epoch 8816 lr 7.8125e-06
8041 Epoch 8818/10000
8042  - 0s - loss: 1.6993e-04 - mean_absolute_error: 0.0042 -
     val_loss: 32.1098 - val_mean_absolute_error: 3.6117
8043 epoch_end_callback epoch 8817 lr 7.8125e-06
8044 Epoch 8819/10000
8045  - 0s - loss: 1.5741e-04 - mean_absolute_error: 0.0044 -
     val_loss: 32.1418 - val_mean_absolute_error: 3.6121
8046 epoch_end_callback epoch 8818 lr 7.8125e-06
8047 Epoch 8820/10000
8048  - 0s - loss: 1.5486e-04 - mean_absolute_error: 0.0038 -
     val_loss: 32.1423 - val_mean_absolute_error: 3.6125
8049
8050 Epoch 08820: saving model to ./model/
     model_Epoch8820_val_mean_absolute_error3.612.h5
8051 epoch_end_callback epoch 8819 lr 7.8125e-06
8052 Epoch 8821/10000
8053  - 0s - loss: 1.6956e-04 - mean_absolute_error: 0.0044 -
     val_loss: 32.1414 - val_mean_absolute_error: 3.6119
8054 epoch_end_callback epoch 8820 lr 7.8125e-06
8055 Epoch 8822/10000
8056  - 0s - loss: 1.7006e-04 - mean_absolute_error: 0.0044 -
     val_loss: 32.1381 - val_mean_absolute_error: 3.6121
8057 epoch_end_callback epoch 8821 lr 7.8125e-06
8058 Epoch 8823/10000
8059  - 0s - loss: 1.7536e-04 - mean_absolute_error: 0.0047 -
     val_loss: 32.1441 - val_mean_absolute_error: 3.6119
8060 epoch_end_callback epoch 8822 lr 7.8125e-06
8061 Epoch 8824/10000
8062  - 0s - loss: 1.6709e-04 - mean_absolute_error: 0.0040 -
     val_loss: 32.1488 - val_mean_absolute_error: 3.6131
8063 epoch_end_callback epoch 8823 lr 7.8125e-06
8064 Epoch 8825/10000
8065  - 0s - loss: 1.5845e-04 - mean_absolute_error: 0.0040 -
     val_loss: 32.1435 - val_mean_absolute_error: 3.6116
8066 epoch_end_callback epoch 8824 lr 7.8125e-06
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8067  Epoch 8826/10000
8068   - 0s - loss: 1.7329e-04 - mean_absolute_error: 0.0045 -
       val_loss: 32.1450 - val_mean_absolute_error: 3.6119
8069  epoch_end_callback epoch 8825 lr 7.8125e-06
8070  Epoch 8827/10000
8071   - 0s - loss: 1.6719e-04 - mean_absolute_error: 0.0043 -
       val_loss: 32.1419 - val_mean_absolute_error: 3.6122
8072  epoch_end_callback epoch 8826 lr 7.8125e-06
8073  Epoch 8828/10000
8074   - 0s - loss: 1.6985e-04 - mean_absolute_error: 0.0046 -
       val_loss: 32.1449 - val_mean_absolute_error: 3.6127
8075  epoch_end_callback epoch 8827 lr 7.8125e-06
8076  Epoch 8829/10000
8077   - 0s - loss: 1.5780e-04 - mean_absolute_error: 0.0042 -
       val_loss: 32.1421 - val_mean_absolute_error: 3.6122
8078  epoch_end_callback epoch 8828 lr 7.8125e-06
8079  Epoch 8830/10000
8080   - 0s - loss: 1.6665e-04 - mean_absolute_error: 0.0051 -
       val_loss: 32.1481 - val_mean_absolute_error: 3.6126
8081
8082  Epoch 08830: saving model to ./model/
       model_Epoch8830_val_mean_absolute_error3.613.h5
8083  epoch_end_callback epoch 8829 lr 7.8125e-06
8084  Epoch 8831/10000
8085   - 0s - loss: 1.5940e-04 - mean_absolute_error: 0.0040 -
       val_loss: 32.1506 - val_mean_absolute_error: 3.6127
8086  epoch_end_callback epoch 8830 lr 7.8125e-06
8087  Epoch 8832/10000
8088   - 0s - loss: 1.7307e-04 - mean_absolute_error: 0.0045 -
       val_loss: 32.1505 - val_mean_absolute_error: 3.6128
8089  epoch_end_callback epoch 8831 lr 7.8125e-06
8090  Epoch 8833/10000
8091   - 0s - loss: 1.8053e-04 - mean_absolute_error: 0.0042 -
       val_loss: 32.1423 - val_mean_absolute_error: 3.6123
8092  epoch_end_callback epoch 8832 lr 7.8125e-06
8093  Epoch 8834/10000
8094   - 0s - loss: 1.6254e-04 - mean_absolute_error: 0.0042 -
```

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8094  val_loss: 32.1421 - val_mean_absolute_error: 3.6122
8095  epoch_end_callback epoch 8833 lr 7.8125e-06
8096  Epoch 8835/10000
8097   - 0s - loss: 1.6170e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1504 - val_mean_absolute_error: 3.6123
8098  epoch_end_callback epoch 8834 lr 7.8125e-06
8099  Epoch 8836/10000
8100   - 0s - loss: 1.6552e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1610 - val_mean_absolute_error: 3.6133
8101  epoch_end_callback epoch 8835 lr 7.8125e-06
8102  Epoch 8837/10000
8103   - 0s - loss: 1.6137e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1487 - val_mean_absolute_error: 3.6127
8104  epoch_end_callback epoch 8836 lr 7.8125e-06
8105  Epoch 8838/10000
8106   - 0s - loss: 1.7114e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1448 - val_mean_absolute_error: 3.6122
8107  epoch_end_callback epoch 8837 lr 7.8125e-06
8108  Epoch 8839/10000
8109   - 0s - loss: 1.7108e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1363 - val_mean_absolute_error: 3.6119
8110  epoch_end_callback epoch 8838 lr 7.8125e-06
8111  Epoch 8840/10000
8112   - 0s - loss: 1.6364e-04 - mean_absolute_error: 0.0040 -
      val_loss: 32.1427 - val_mean_absolute_error: 3.6121
8113
8114  Epoch 08840: saving model to ./model/
      model_Epoch8840_val_mean_absolute_error3.612.h5
8115  epoch_end_callback epoch 8839 lr 7.8125e-06
8116  Epoch 8841/10000
8117   - 0s - loss: 1.7933e-04 - mean_absolute_error: 0.0038 -
      val_loss: 32.1415 - val_mean_absolute_error: 3.6120
8118  epoch_end_callback epoch 8840 lr 7.8125e-06
8119  Epoch 8842/10000
8120   - 0s - loss: 1.7317e-04 - mean_absolute_error: 0.0040 -
      val_loss: 32.1422 - val_mean_absolute_error: 3.6124
8121  epoch_end_callback epoch 8841 lr 7.8125e-06
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8122  Epoch 8843/10000
8123   - 0s - loss: 1.5655e-04 - mean_absolute_error: 0.0044 -
       val_loss: 32.1450 - val_mean_absolute_error: 3.6122
8124  epoch_end_callback epoch 8842 lr 7.8125e-06
8125  Epoch 8844/10000
8126   - 0s - loss: 1.7132e-04 - mean_absolute_error: 0.0045 -
       val_loss: 32.1455 - val_mean_absolute_error: 3.6121
8127  epoch_end_callback epoch 8843 lr 7.8125e-06
8128  Epoch 8845/10000
8129   - 0s - loss: 1.3491e-04 - mean_absolute_error: 0.0036 -
       val_loss: 32.1530 - val_mean_absolute_error: 3.6130
8130  epoch_end_callback epoch 8844 lr 7.8125e-06
8131  Epoch 8846/10000
8132   - 0s - loss: 1.7425e-04 - mean_absolute_error: 0.0054 -
       val_loss: 32.1340 - val_mean_absolute_error: 3.6115
8133  epoch_end_callback epoch 8845 lr 7.8125e-06
8134  Epoch 8847/10000
8135   - 0s - loss: 1.7071e-04 - mean_absolute_error: 0.0039 -
       val_loss: 32.1477 - val_mean_absolute_error: 3.6129
8136  epoch_end_callback epoch 8846 lr 7.8125e-06
8137  Epoch 8848/10000
8138   - 0s - loss: 1.7110e-04 - mean_absolute_error: 0.0046 -
       val_loss: 32.1493 - val_mean_absolute_error: 3.6127
8139  epoch_end_callback epoch 8847 lr 7.8125e-06
8140  Epoch 8849/10000
8141   - 0s - loss: 1.6782e-04 - mean_absolute_error: 0.0046 -
       val_loss: 32.1429 - val_mean_absolute_error: 3.6121
8142  epoch_end_callback epoch 8848 lr 7.8125e-06
8143  Epoch 8850/10000
8144   - 0s - loss: 1.5736e-04 - mean_absolute_error: 0.0040 -
       val_loss: 32.1463 - val_mean_absolute_error: 3.6116
8145
8146  Epoch 08850: saving model to ./model/
       model_Epoch8850_val_mean_absolute_error3.612.h5
8147  epoch_end_callback epoch 8849 lr 7.8125e-06
8148  Epoch 8851/10000
8149   - 0s - loss: 1.6296e-04 - mean_absolute_error: 0.0046 -
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8149  val_loss: 32.1397 - val_mean_absolute_error: 3.6123
8150  epoch_end_callback epoch 8850 lr 7.8125e-06
8151  Epoch 8852/10000
8152   - 0s - loss: 1.6387e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1522 - val_mean_absolute_error: 3.6117
8153  epoch_end_callback epoch 8851 lr 7.8125e-06
8154  Epoch 8853/10000
8155   - 0s - loss: 1.5499e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1528 - val_mean_absolute_error: 3.6120
8156  epoch_end_callback epoch 8852 lr 7.8125e-06
8157  Epoch 8854/10000
8158   - 0s - loss: 1.8161e-04 - mean_absolute_error: 0.0053 -
      val_loss: 32.1500 - val_mean_absolute_error: 3.6122
8159  epoch_end_callback epoch 8853 lr 7.8125e-06
8160  Epoch 8855/10000
8161   - 0s - loss: 1.6303e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1550 - val_mean_absolute_error: 3.6126
8162  epoch_end_callback epoch 8854 lr 7.8125e-06
8163  Epoch 8856/10000
8164   - 0s - loss: 1.6890e-04 - mean_absolute_error: 0.0039 -
      val_loss: 32.1503 - val_mean_absolute_error: 3.6124
8165  epoch_end_callback epoch 8855 lr 7.8125e-06
8166  Epoch 8857/10000
8167   - 0s - loss: 1.6789e-04 - mean_absolute_error: 0.0048 -
      val_loss: 32.1343 - val_mean_absolute_error: 3.6118
8168  epoch_end_callback epoch 8856 lr 7.8125e-06
8169  Epoch 8858/10000
8170   - 0s - loss: 1.5548e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1367 - val_mean_absolute_error: 3.6113
8171  epoch_end_callback epoch 8857 lr 7.8125e-06
8172  Epoch 8859/10000
8173   - 0s - loss: 1.6901e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1538 - val_mean_absolute_error: 3.6122
8174  epoch_end_callback epoch 8858 lr 7.8125e-06
8175  Epoch 8860/10000
8176   - 0s - loss: 1.6708e-04 - mean_absolute_error: 0.0040 -
      val_loss: 32.1370 - val_mean_absolute_error: 3.6111
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8177

8178 Epoch 08860: saving model to ./model/
model_Epoch8860_val_mean_absolute_error3.611.h5

8179 epoch_end_callback epoch 8859 lr 7.8125e-06

8180 Epoch 8861/10000

8181 - 0s - loss: 1.6207e-04 - mean_absolute_error: 0.0043 -
val_loss: 32.1530 - val_mean_absolute_error: 3.6131

8182 epoch_end_callback epoch 8860 lr 7.8125e-06

8183 Epoch 8862/10000

8184 - 0s - loss: 1.6278e-04 - mean_absolute_error: 0.0042 -
val_loss: 32.1590 - val_mean_absolute_error: 3.6134

8185 epoch_end_callback epoch 8861 lr 7.8125e-06

8186 Epoch 8863/10000

8187 - 0s - loss: 1.7005e-04 - mean_absolute_error: 0.0045 -
val_loss: 32.1583 - val_mean_absolute_error: 3.6132

8188 epoch_end_callback epoch 8862 lr 7.8125e-06

8189 Epoch 8864/10000

8190 - 0s - loss: 1.4114e-04 - mean_absolute_error: 0.0041 -
val_loss: 32.1554 - val_mean_absolute_error: 3.6130

8191 epoch_end_callback epoch 8863 lr 7.8125e-06

8192 Epoch 8865/10000

8193 - 0s - loss: 1.6539e-04 - mean_absolute_error: 0.0049 -
val_loss: 32.1408 - val_mean_absolute_error: 3.6127

8194 epoch_end_callback epoch 8864 lr 7.8125e-06

8195 Epoch 8866/10000

8196 - 0s - loss: 1.4423e-04 - mean_absolute_error: 0.0043 -
val_loss: 32.1373 - val_mean_absolute_error: 3.6109

8197 epoch_end_callback epoch 8865 lr 7.8125e-06

8198 Epoch 8867/10000

8199 - 0s - loss: 1.7163e-04 - mean_absolute_error: 0.0046 -
val_loss: 32.1518 - val_mean_absolute_error: 3.6128

8200 epoch_end_callback epoch 8866 lr 7.8125e-06

8201 Epoch 8868/10000

8202 - 0s - loss: 1.7056e-04 - mean_absolute_error: 0.0044 -
val_loss: 32.1450 - val_mean_absolute_error: 3.6118

8203 epoch_end_callback epoch 8867 lr 7.8125e-06

8204 Epoch 8869/10000

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8205    - 0s - loss: 1.6263e-04 - mean_absolute_error: 0.0047 -
        val_loss: 32.1522 - val_mean_absolute_error: 3.6123
8206 epoch_end_callback epoch 8868 lr 7.8125e-06
8207 Epoch 8870/10000
8208    - 0s - loss: 1.6455e-04 - mean_absolute_error: 0.0042 -
        val_loss: 32.1465 - val_mean_absolute_error: 3.6135
8209
8210 Epoch 08870: saving model to ./model/
        model_Epoch8870_val_mean_absolute_error3.613.h5
8211 epoch_end_callback epoch 8869 lr 7.8125e-06
8212 Epoch 8871/10000
8213    - 0s - loss: 1.6944e-04 - mean_absolute_error: 0.0046 -
        val_loss: 32.1419 - val_mean_absolute_error: 3.6125
8214 epoch_end_callback epoch 8870 lr 7.8125e-06
8215 Epoch 8872/10000
8216    - 0s - loss: 1.5860e-04 - mean_absolute_error: 0.0042 -
        val_loss: 32.1504 - val_mean_absolute_error: 3.6130
8217 epoch_end_callback epoch 8871 lr 7.8125e-06
8218 Epoch 8873/10000
8219    - 0s - loss: 1.6405e-04 - mean_absolute_error: 0.0043 -
        val_loss: 32.1452 - val_mean_absolute_error: 3.6117
8220 epoch_end_callback epoch 8872 lr 7.8125e-06
8221 Epoch 8874/10000
8222    - 0s - loss: 1.6025e-04 - mean_absolute_error: 0.0045 -
        val_loss: 32.1439 - val_mean_absolute_error: 3.6121
8223 epoch_end_callback epoch 8873 lr 7.8125e-06
8224 Epoch 8875/10000
8225    - 0s - loss: 1.6622e-04 - mean_absolute_error: 0.0043 -
        val_loss: 32.1559 - val_mean_absolute_error: 3.6131
8226 epoch_end_callback epoch 8874 lr 7.8125e-06
8227 Epoch 8876/10000
8228    - 0s - loss: 1.7343e-04 - mean_absolute_error: 0.0048 -
        val_loss: 32.1473 - val_mean_absolute_error: 3.6124
8229 epoch_end_callback epoch 8875 lr 7.8125e-06
8230 Epoch 8877/10000
8231    - 0s - loss: 1.6300e-04 - mean_absolute_error: 0.0040 -
        val_loss: 32.1389 - val_mean_absolute_error: 3.6123
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8232  epoch_end_callback epoch 8876 lr 7.8125e-06
8233  Epoch 8878/10000
8234   - 0s - loss: 1.8251e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1475 - val_mean_absolute_error: 3.6126
8235  epoch_end_callback epoch 8877 lr 7.8125e-06
8236  Epoch 8879/10000
8237   - 0s - loss: 1.6025e-04 - mean_absolute_error: 0.0041 -
      val_loss: 32.1382 - val_mean_absolute_error: 3.6119
8238  epoch_end_callback epoch 8878 lr 7.8125e-06
8239  Epoch 8880/10000
8240   - 0s - loss: 1.6767e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1435 - val_mean_absolute_error: 3.6122
8241
8242  Epoch 08880: saving model to ./model/
      model_Epoch8880_val_mean_absolute_error3.612.h5
8243  epoch_end_callback epoch 8879 lr 7.8125e-06
8244  Epoch 8881/10000
8245   - 0s - loss: 1.7084e-04 - mean_absolute_error: 0.0047 -
      val_loss: 32.1645 - val_mean_absolute_error: 3.6127
8246  epoch_end_callback epoch 8880 lr 7.8125e-06
8247  Epoch 8882/10000
8248   - 0s - loss: 1.4566e-04 - mean_absolute_error: 0.0041 -
      val_loss: 32.1448 - val_mean_absolute_error: 3.6121
8249  epoch_end_callback epoch 8881 lr 7.8125e-06
8250  Epoch 8883/10000
8251   - 0s - loss: 1.7168e-04 - mean_absolute_error: 0.0038 -
      val_loss: 32.1503 - val_mean_absolute_error: 3.6128
8252  epoch_end_callback epoch 8882 lr 7.8125e-06
8253  Epoch 8884/10000
8254   - 0s - loss: 1.7321e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1611 - val_mean_absolute_error: 3.6131
8255  epoch_end_callback epoch 8883 lr 7.8125e-06
8256  Epoch 8885/10000
8257   - 0s - loss: 1.6595e-04 - mean_absolute_error: 0.0046 -
      val_loss: 32.1548 - val_mean_absolute_error: 3.6125
8258  epoch_end_callback epoch 8884 lr 7.8125e-06
8259  Epoch 8886/10000
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8260    - 0s - loss: 1.6382e-04 - mean_absolute_error: 0.0042 -
        val_loss: 32.1476 - val_mean_absolute_error: 3.6123
8261    epoch_end_callback epoch 8885 lr 7.8125e-06
8262    Epoch 8887/10000
8263    - 0s - loss: 1.5505e-04 - mean_absolute_error: 0.0038 -
        val_loss: 32.1401 - val_mean_absolute_error: 3.6119
8264    epoch_end_callback epoch 8886 lr 7.8125e-06
8265    Epoch 8888/10000
8266    - 0s - loss: 1.6829e-04 - mean_absolute_error: 0.0043 -
        val_loss: 32.1372 - val_mean_absolute_error: 3.6118
8267    epoch_end_callback epoch 8887 lr 7.8125e-06
8268    Epoch 8889/10000
8269    - 0s - loss: 1.7120e-04 - mean_absolute_error: 0.0040 -
        val_loss: 32.1457 - val_mean_absolute_error: 3.6118
8270    epoch_end_callback epoch 8888 lr 7.8125e-06
8271    Epoch 8890/10000
8272    - 0s - loss: 1.6357e-04 - mean_absolute_error: 0.0041 -
        val_loss: 32.1406 - val_mean_absolute_error: 3.6124
8273
8274    Epoch 08890: saving model to ./model/
        model_Epoch8890_val_mean_absolute_error3.612.h5
8275    epoch_end_callback epoch 8889 lr 7.8125e-06
8276    Epoch 8891/10000
8277    - 0s - loss: 1.5918e-04 - mean_absolute_error: 0.0043 -
        val_loss: 32.1494 - val_mean_absolute_error: 3.6132
8278    epoch_end_callback epoch 8890 lr 7.8125e-06
8279    Epoch 8892/10000
8280    - 0s - loss: 1.6670e-04 - mean_absolute_error: 0.0046 -
        val_loss: 32.1534 - val_mean_absolute_error: 3.6135
8281    epoch_end_callback epoch 8891 lr 7.8125e-06
8282    Epoch 8893/10000
8283    - 0s - loss: 1.4278e-04 - mean_absolute_error: 0.0043 -
        val_loss: 32.1178 - val_mean_absolute_error: 3.6111
8284    epoch_end_callback epoch 8892 lr 7.8125e-06
8285    Epoch 8894/10000
8286    - 0s - loss: 1.6720e-04 - mean_absolute_error: 0.0047 -
        val_loss: 32.1467 - val_mean_absolute_error: 3.6117
```

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8287  epoch_end_callback epoch 8893 lr 7.8125e-06
8288  Epoch 8895/10000
8289   - 0s - loss: 1.6204e-04 - mean_absolute_error: 0.0040 -
      val_loss: 32.1440 - val_mean_absolute_error: 3.6119
8290  epoch_end_callback epoch 8894 lr 7.8125e-06
8291  Epoch 8896/10000
8292   - 0s - loss: 1.5769e-04 - mean_absolute_error: 0.0041 -
      val_loss: 32.1508 - val_mean_absolute_error: 3.6126
8293  epoch_end_callback epoch 8895 lr 7.8125e-06
8294  Epoch 8897/10000
8295   - 0s - loss: 1.7079e-04 - mean_absolute_error: 0.0047 -
      val_loss: 32.1431 - val_mean_absolute_error: 3.6126
8296  epoch_end_callback epoch 8896 lr 7.8125e-06
8297  Epoch 8898/10000
8298   - 0s - loss: 1.6307e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1360 - val_mean_absolute_error: 3.6125
8299  epoch_end_callback epoch 8897 lr 7.8125e-06
8300  Epoch 8899/10000
8301   - 0s - loss: 1.6233e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1471 - val_mean_absolute_error: 3.6125
8302  epoch_end_callback epoch 8898 lr 7.8125e-06
8303  Epoch 8900/10000
8304   - 0s - loss: 1.6355e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1316 - val_mean_absolute_error: 3.6114
8305
8306  Epoch 08900: saving model to ./model/
      model_Epoch8900_val_mean_absolute_error3.611.h5
8307  epoch_end_callback epoch 8899 lr 7.8125e-06
8308  Epoch 8901/10000
8309   - 0s - loss: 1.5942e-04 - mean_absolute_error: 0.0046 -
      val_loss: 32.1443 - val_mean_absolute_error: 3.6113
8310  epoch_end_callback epoch 8900 lr 7.8125e-06
8311  Epoch 8902/10000
8312   - 0s - loss: 1.6695e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1508 - val_mean_absolute_error: 3.6120
8313  epoch_end_callback epoch 8901 lr 7.8125e-06
8314  Epoch 8903/10000
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8315    - 0s - loss: 1.5542e-04 - mean_absolute_error: 0.0044 -
        val_loss: 32.1311 - val_mean_absolute_error: 3.6122
8316  epoch_end_callback epoch 8902 lr 7.8125e-06
8317  Epoch 8904/10000
8318    - 0s - loss: 1.6727e-04 - mean_absolute_error: 0.0046 -
        val_loss: 32.1413 - val_mean_absolute_error: 3.6121
8319  epoch_end_callback epoch 8903 lr 7.8125e-06
8320  Epoch 8905/10000
8321    - 0s - loss: 1.5857e-04 - mean_absolute_error: 0.0041 -
        val_loss: 32.1424 - val_mean_absolute_error: 3.6121
8322  epoch_end_callback epoch 8904 lr 7.8125e-06
8323  Epoch 8906/10000
8324    - 0s - loss: 1.6581e-04 - mean_absolute_error: 0.0048 -
        val_loss: 32.1467 - val_mean_absolute_error: 3.6127
8325  epoch_end_callback epoch 8905 lr 7.8125e-06
8326  Epoch 8907/10000
8327    - 0s - loss: 1.6167e-04 - mean_absolute_error: 0.0043 -
        val_loss: 32.1269 - val_mean_absolute_error: 3.6122
8328  epoch_end_callback epoch 8906 lr 7.8125e-06
8329  Epoch 8908/10000
8330    - 0s - loss: 1.6402e-04 - mean_absolute_error: 0.0045 -
        val_loss: 32.1467 - val_mean_absolute_error: 3.6125
8331  epoch_end_callback epoch 8907 lr 7.8125e-06
8332  Epoch 8909/10000
8333    - 0s - loss: 1.6014e-04 - mean_absolute_error: 0.0042 -
        val_loss: 32.1511 - val_mean_absolute_error: 3.6125
8334  epoch_end_callback epoch 8908 lr 7.8125e-06
8335  Epoch 8910/10000
8336    - 0s - loss: 1.6447e-04 - mean_absolute_error: 0.0047 -
        val_loss: 32.1500 - val_mean_absolute_error: 3.6123
8337
8338  Epoch 08910: saving model to ./model/
        model_Epoch8910_val_mean_absolute_error3.612.h5
8339  epoch_end_callback epoch 8909 lr 7.8125e-06
8340  Epoch 8911/10000
8341    - 0s - loss: 1.6592e-04 - mean_absolute_error: 0.0045 -
        val_loss: 32.1546 - val_mean_absolute_error: 3.6128
```

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8342  epoch_end_callback epoch 8910 lr 7.8125e-06
8343  Epoch 8912/10000
8344   - 0s - loss: 1.7192e-04 - mean_absolute_error: 0.0038 -
       val_loss: 32.1467 - val_mean_absolute_error: 3.6115
8345  epoch_end_callback epoch 8911 lr 7.8125e-06
8346  Epoch 8913/10000
8347   - 0s - loss: 1.6265e-04 - mean_absolute_error: 0.0046 -
       val_loss: 32.1650 - val_mean_absolute_error: 3.6126
8348  epoch_end_callback epoch 8912 lr 7.8125e-06
8349  Epoch 8914/10000
8350   - 0s - loss: 1.6259e-04 - mean_absolute_error: 0.0043 -
       val_loss: 32.1466 - val_mean_absolute_error: 3.6126
8351  epoch_end_callback epoch 8913 lr 7.8125e-06
8352  Epoch 8915/10000
8353   - 0s - loss: 1.6116e-04 - mean_absolute_error: 0.0043 -
       val_loss: 32.1480 - val_mean_absolute_error: 3.6120
8354  epoch_end_callback epoch 8914 lr 7.8125e-06
8355  Epoch 8916/10000
8356   - 0s - loss: 1.6666e-04 - mean_absolute_error: 0.0041 -
       val_loss: 32.1453 - val_mean_absolute_error: 3.6119
8357  epoch_end_callback epoch 8915 lr 7.8125e-06
8358  Epoch 8917/10000
8359   - 0s - loss: 1.7253e-04 - mean_absolute_error: 0.0049 -
       val_loss: 32.1529 - val_mean_absolute_error: 3.6129
8360  epoch_end_callback epoch 8916 lr 7.8125e-06
8361  Epoch 8918/10000
8362   - 0s - loss: 1.6592e-04 - mean_absolute_error: 0.0040 -
       val_loss: 32.1330 - val_mean_absolute_error: 3.6116
8363  epoch_end_callback epoch 8917 lr 7.8125e-06
8364  Epoch 8919/10000
8365   - 0s - loss: 1.4821e-04 - mean_absolute_error: 0.0038 -
       val_loss: 32.1381 - val_mean_absolute_error: 3.6124
8366  epoch_end_callback epoch 8918 lr 7.8125e-06
8367  Epoch 8920/10000
8368   - 0s - loss: 1.5316e-04 - mean_absolute_error: 0.0041 -
       val_loss: 32.1473 - val_mean_absolute_error: 3.6133
8369
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8370  Epoch 08920: saving model to ./model/
      model_Epoch8920_val_mean_absolute_error3.613.h5
8371  epoch_end_callback epoch 8919 lr 7.8125e-06
8372  Epoch 8921/10000
8373   - 0s - loss: 1.5781e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1570 - val_mean_absolute_error: 3.6130
8374  epoch_end_callback epoch 8920 lr 7.8125e-06
8375  Epoch 8922/10000
8376   - 0s - loss: 1.7125e-04 - mean_absolute_error: 0.0046 -
      val_loss: 32.1471 - val_mean_absolute_error: 3.6126
8377  epoch_end_callback epoch 8921 lr 7.8125e-06
8378  Epoch 8923/10000
8379   - 0s - loss: 1.6065e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1450 - val_mean_absolute_error: 3.6129
8380  epoch_end_callback epoch 8922 lr 7.8125e-06
8381  Epoch 8924/10000
8382   - 0s - loss: 1.6386e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1368 - val_mean_absolute_error: 3.6120
8383  epoch_end_callback epoch 8923 lr 7.8125e-06
8384  Epoch 8925/10000
8385   - 0s - loss: 1.6401e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1421 - val_mean_absolute_error: 3.6119
8386  epoch_end_callback epoch 8924 lr 7.8125e-06
8387  Epoch 8926/10000
8388   - 0s - loss: 1.5528e-04 - mean_absolute_error: 0.0040 -
      val_loss: 32.1393 - val_mean_absolute_error: 3.6125
8389  epoch_end_callback epoch 8925 lr 7.8125e-06
8390  Epoch 8927/10000
8391   - 0s - loss: 1.7105e-04 - mean_absolute_error: 0.0048 -
      val_loss: 32.1419 - val_mean_absolute_error: 3.6120
8392  epoch_end_callback epoch 8926 lr 7.8125e-06
8393  Epoch 8928/10000
8394   - 0s - loss: 1.5817e-04 - mean_absolute_error: 0.0041 -
      val_loss: 32.1468 - val_mean_absolute_error: 3.6121
8395  epoch_end_callback epoch 8927 lr 7.8125e-06
8396  Epoch 8929/10000
8397   - 0s - loss: 1.5594e-04 - mean_absolute_error: 0.0046 -
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8397 val_loss: 32.1485 - val_mean_absolute_error: 3.6126

8398 epoch_end_callback epoch 8928 lr 7.8125e-06

8399 Epoch 8930/10000

8400 - 0s - loss: 1.7033e-04 - mean_absolute_error: 0.0048 - val_loss: 32.1462 - val_mean_absolute_error: 3.6124

8401

8402 Epoch 08930: saving model to ./model/model_Epoch8930_val_mean_absolute_error3.612.h5

8403 epoch_end_callback epoch 8929 lr 7.8125e-06

8404 Epoch 8931/10000

8405 - 0s - loss: 1.6523e-04 - mean_absolute_error: 0.0040 - val_loss: 32.1303 - val_mean_absolute_error: 3.6121

8406 epoch_end_callback epoch 8930 lr 7.8125e-06

8407 Epoch 8932/10000

8408 - 0s - loss: 1.5879e-04 - mean_absolute_error: 0.0046 - val_loss: 32.1493 - val_mean_absolute_error: 3.6127

8409 epoch_end_callback epoch 8931 lr 7.8125e-06

8410 Epoch 8933/10000

8411 - 0s - loss: 1.6465e-04 - mean_absolute_error: 0.0041 - val_loss: 32.1489 - val_mean_absolute_error: 3.6129

8412 epoch_end_callback epoch 8932 lr 7.8125e-06

8413 Epoch 8934/10000

8414 - 0s - loss: 1.6357e-04 - mean_absolute_error: 0.0042 - val_loss: 32.1563 - val_mean_absolute_error: 3.6134

8415 epoch_end_callback epoch 8933 lr 7.8125e-06

8416 Epoch 8935/10000

8417 - 0s - loss: 1.6471e-04 - mean_absolute_error: 0.0044 - val_loss: 32.1439 - val_mean_absolute_error: 3.6119

8418 epoch_end_callback epoch 8934 lr 7.8125e-06

8419 Epoch 8936/10000

8420 - 0s - loss: 1.7139e-04 - mean_absolute_error: 0.0046 - val_loss: 32.1474 - val_mean_absolute_error: 3.6123

8421 epoch_end_callback epoch 8935 lr 7.8125e-06

8422 Epoch 8937/10000

8423 - 0s - loss: 1.5795e-04 - mean_absolute_error: 0.0040 - val_loss: 32.1480 - val_mean_absolute_error: 3.6123

8424 epoch_end_callback epoch 8936 lr 7.8125e-06

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8425  Epoch 8938/10000
8426   - 0s - loss: 1.6928e-04 - mean_absolute_error: 0.0045 -
       val_loss: 32.1359 - val_mean_absolute_error: 3.6119
8427  epoch_end_callback epoch 8937 lr 7.8125e-06
8428  Epoch 8939/10000
8429   - 0s - loss: 1.6799e-04 - mean_absolute_error: 0.0041 -
       val_loss: 32.1503 - val_mean_absolute_error: 3.6122
8430  epoch_end_callback epoch 8938 lr 7.8125e-06
8431  Epoch 8940/10000
8432   - 0s - loss: 1.6625e-04 - mean_absolute_error: 0.0040 -
       val_loss: 32.1453 - val_mean_absolute_error: 3.6115
8433
8434  Epoch 08940: saving model to ./model/
       model_Epoch8940_val_mean_absolute_error3.611.h5
8435  epoch_end_callback epoch 8939 lr 7.8125e-06
8436  Epoch 8941/10000
8437   - 0s - loss: 1.6608e-04 - mean_absolute_error: 0.0043 -
       val_loss: 32.1536 - val_mean_absolute_error: 3.6131
8438  epoch_end_callback epoch 8940 lr 7.8125e-06
8439  Epoch 8942/10000
8440   - 0s - loss: 1.5390e-04 - mean_absolute_error: 0.0041 -
       val_loss: 32.1458 - val_mean_absolute_error: 3.6118
8441  epoch_end_callback epoch 8941 lr 7.8125e-06
8442  Epoch 8943/10000
8443   - 0s - loss: 1.6551e-04 - mean_absolute_error: 0.0047 -
       val_loss: 32.1520 - val_mean_absolute_error: 3.6129
8444  epoch_end_callback epoch 8942 lr 7.8125e-06
8445  Epoch 8944/10000
8446   - 0s - loss: 1.6171e-04 - mean_absolute_error: 0.0043 -
       val_loss: 32.1423 - val_mean_absolute_error: 3.6122
8447  epoch_end_callback epoch 8943 lr 7.8125e-06
8448  Epoch 8945/10000
8449   - 0s - loss: 1.6878e-04 - mean_absolute_error: 0.0043 -
       val_loss: 32.1389 - val_mean_absolute_error: 3.6121
8450  epoch_end_callback epoch 8944 lr 7.8125e-06
8451  Epoch 8946/10000
8452   - 0s - loss: 1.5772e-04 - mean_absolute_error: 0.0042 -
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8452  val_loss: 32.1479 - val_mean_absolute_error: 3.6121
8453  epoch_end_callback epoch 8945 lr 7.8125e-06
8454  Epoch 8947/10000
8455   - 0s - loss: 1.6091e-04 - mean_absolute_error: 0.0041 -
      val_loss: 32.1398 - val_mean_absolute_error: 3.6117
8456  epoch_end_callback epoch 8946 lr 7.8125e-06
8457  Epoch 8948/10000
8458   - 0s - loss: 1.5481e-04 - mean_absolute_error: 0.0046 -
      val_loss: 32.1527 - val_mean_absolute_error: 3.6125
8459  epoch_end_callback epoch 8947 lr 7.8125e-06
8460  Epoch 8949/10000
8461   - 0s - loss: 1.7810e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1469 - val_mean_absolute_error: 3.6125
8462  epoch_end_callback epoch 8948 lr 7.8125e-06
8463  Epoch 8950/10000
8464   - 0s - loss: 1.6283e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1502 - val_mean_absolute_error: 3.6121
8465
8466  Epoch 08950: saving model to ./model/
      model_Epoch8950_val_mean_absolute_error3.612.h5
8467  epoch_end_callback epoch 8949 lr 7.8125e-06
8468  Epoch 8951/10000
8469   - 0s - loss: 1.6376e-04 - mean_absolute_error: 0.0046 -
      val_loss: 32.1476 - val_mean_absolute_error: 3.6120
8470  epoch_end_callback epoch 8950 lr 7.8125e-06
8471  Epoch 8952/10000
8472   - 0s - loss: 1.7225e-04 - mean_absolute_error: 0.0040 -
      val_loss: 32.1480 - val_mean_absolute_error: 3.6129
8473  epoch_end_callback epoch 8951 lr 7.8125e-06
8474  Epoch 8953/10000
8475   - 0s - loss: 1.5261e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1555 - val_mean_absolute_error: 3.6131
8476  epoch_end_callback epoch 8952 lr 7.8125e-06
8477  Epoch 8954/10000
8478   - 0s - loss: 1.5137e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1443 - val_mean_absolute_error: 3.6124
8479  epoch_end_callback epoch 8953 lr 7.8125e-06
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8480  Epoch 8955/10000
8481   - 0s - loss: 1.6483e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1530 - val_mean_absolute_error: 3.6118
8482  epoch_end_callback epoch 8954 lr 7.8125e-06
8483  Epoch 8956/10000
8484   - 0s - loss: 1.6862e-04 - mean_absolute_error: 0.0047 -
      val_loss: 32.1577 - val_mean_absolute_error: 3.6125
8485  epoch_end_callback epoch 8955 lr 7.8125e-06
8486  Epoch 8957/10000
8487   - 0s - loss: 1.7084e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1506 - val_mean_absolute_error: 3.6132
8488  epoch_end_callback epoch 8956 lr 7.8125e-06
8489  Epoch 8958/10000
8490   - 0s - loss: 1.6451e-04 - mean_absolute_error: 0.0041 -
      val_loss: 32.1439 - val_mean_absolute_error: 3.6121
8491  epoch_end_callback epoch 8957 lr 7.8125e-06
8492  Epoch 8959/10000
8493   - 0s - loss: 1.6090e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1664 - val_mean_absolute_error: 3.6130
8494  epoch_end_callback epoch 8958 lr 7.8125e-06
8495  Epoch 8960/10000
8496   - 0s - loss: 1.5989e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1498 - val_mean_absolute_error: 3.6125
8497
8498  Epoch 08960: saving model to ./model/
      model_Epoch8960_val_mean_absolute_error3.612.h5
8499  epoch_end_callback epoch 8959 lr 7.8125e-06
8500  Epoch 8961/10000
8501   - 0s - loss: 1.6035e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1354 - val_mean_absolute_error: 3.6117
8502  epoch_end_callback epoch 8960 lr 7.8125e-06
8503  Epoch 8962/10000
8504   - 0s - loss: 1.6054e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1390 - val_mean_absolute_error: 3.6117
8505  epoch_end_callback epoch 8961 lr 7.8125e-06
8506  Epoch 8963/10000
8507   - 0s - loss: 1.3679e-04 - mean_absolute_error: 0.0038 -
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8507  val_loss: 32.1644 - val_mean_absolute_error: 3.6127
8508  epoch_end_callback epoch 8962 lr 7.8125e-06
8509  Epoch 8964/10000
8510   - 0s - loss: 1.7453e-04 - mean_absolute_error: 0.0049 -
      val_loss: 32.1502 - val_mean_absolute_error: 3.6117
8511  epoch_end_callback epoch 8963 lr 7.8125e-06
8512  Epoch 8965/10000
8513   - 0s - loss: 1.6297e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1274 - val_mean_absolute_error: 3.6120
8514  epoch_end_callback epoch 8964 lr 7.8125e-06
8515  Epoch 8966/10000
8516   - 0s - loss: 1.6484e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1470 - val_mean_absolute_error: 3.6124
8517  epoch_end_callback epoch 8965 lr 7.8125e-06
8518  Epoch 8967/10000
8519   - 0s - loss: 1.6341e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1222 - val_mean_absolute_error: 3.6113
8520  epoch_end_callback epoch 8966 lr 7.8125e-06
8521  Epoch 8968/10000
8522   - 0s - loss: 1.5145e-04 - mean_absolute_error: 0.0040 -
      val_loss: 32.1380 - val_mean_absolute_error: 3.6122
8523  epoch_end_callback epoch 8967 lr 7.8125e-06
8524  Epoch 8969/10000
8525   - 0s - loss: 1.5597e-04 - mean_absolute_error: 0.0041 -
      val_loss: 32.1458 - val_mean_absolute_error: 3.6122
8526  epoch_end_callback epoch 8968 lr 7.8125e-06
8527  Epoch 8970/10000
8528   - 0s - loss: 1.5843e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1493 - val_mean_absolute_error: 3.6125
8529
8530  Epoch 08970: saving model to ./model/
      model_Epoch8970_val_mean_absolute_error3.613.h5
8531  epoch_end_callback epoch 8969 lr 7.8125e-06
8532  Epoch 8971/10000
8533   - 0s - loss: 1.3885e-04 - mean_absolute_error: 0.0039 -
      val_loss: 32.1474 - val_mean_absolute_error: 3.6125
8534  epoch_end_callback epoch 8970 lr 7.8125e-06
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8535  Epoch 8972/10000
8536   - 0s - loss: 1.6381e-04 - mean_absolute_error: 0.0051 -
       val_loss: 32.1416 - val_mean_absolute_error: 3.6125
8537  epoch_end_callback epoch 8971 lr 7.8125e-06
8538  Epoch 8973/10000
8539   - 0s - loss: 1.5370e-04 - mean_absolute_error: 0.0042 -
       val_loss: 32.1447 - val_mean_absolute_error: 3.6127
8540  epoch_end_callback epoch 8972 lr 7.8125e-06
8541  Epoch 8974/10000
8542   - 0s - loss: 1.6639e-04 - mean_absolute_error: 0.0047 -
       val_loss: 32.1486 - val_mean_absolute_error: 3.6126
8543  epoch_end_callback epoch 8973 lr 7.8125e-06
8544  Epoch 8975/10000
8545   - 0s - loss: 1.5925e-04 - mean_absolute_error: 0.0044 -
       val_loss: 32.1709 - val_mean_absolute_error: 3.6133
8546  epoch_end_callback epoch 8974 lr 7.8125e-06
8547  Epoch 8976/10000
8548   - 0s - loss: 1.6520e-04 - mean_absolute_error: 0.0049 -
       val_loss: 32.1541 - val_mean_absolute_error: 3.6123
8549  epoch_end_callback epoch 8975 lr 7.8125e-06
8550  Epoch 8977/10000
8551   - 0s - loss: 1.6212e-04 - mean_absolute_error: 0.0042 -
       val_loss: 32.1525 - val_mean_absolute_error: 3.6124
8552  epoch_end_callback epoch 8976 lr 7.8125e-06
8553  Epoch 8978/10000
8554   - 0s - loss: 1.6372e-04 - mean_absolute_error: 0.0043 -
       val_loss: 32.1501 - val_mean_absolute_error: 3.6124
8555  epoch_end_callback epoch 8977 lr 7.8125e-06
8556  Epoch 8979/10000
8557   - 0s - loss: 1.5963e-04 - mean_absolute_error: 0.0042 -
       val_loss: 32.1487 - val_mean_absolute_error: 3.6123
8558  epoch_end_callback epoch 8978 lr 7.8125e-06
8559  Epoch 8980/10000
8560   - 0s - loss: 1.7082e-04 - mean_absolute_error: 0.0046 -
       val_loss: 32.1444 - val_mean_absolute_error: 3.6128
8561
8562  Epoch 08980: saving model to ./model/
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8562  model_Epoch8980_val_mean_absolute_error3.613.h5
8563  epoch_end_callback epoch 8979 lr 7.8125e-06
8564  Epoch 8981/10000
8565   - 0s - loss: 1.5810e-04 - mean_absolute_error: 0.0039 -
      val_loss: 32.1421 - val_mean_absolute_error: 3.6119
8566  epoch_end_callback epoch 8980 lr 7.8125e-06
8567  Epoch 8982/10000
8568   - 0s - loss: 1.6524e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1459 - val_mean_absolute_error: 3.6132
8569  epoch_end_callback epoch 8981 lr 7.8125e-06
8570  Epoch 8983/10000
8571   - 0s - loss: 1.6330e-04 - mean_absolute_error: 0.0046 -
      val_loss: 32.1640 - val_mean_absolute_error: 3.6128
8572  epoch_end_callback epoch 8982 lr 7.8125e-06
8573  Epoch 8984/10000
8574   - 0s - loss: 1.6965e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1421 - val_mean_absolute_error: 3.6122
8575  epoch_end_callback epoch 8983 lr 7.8125e-06
8576  Epoch 8985/10000
8577   - 0s - loss: 1.6457e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1475 - val_mean_absolute_error: 3.6122
8578  epoch_end_callback epoch 8984 lr 7.8125e-06
8579  Epoch 8986/10000
8580   - 0s - loss: 1.6116e-04 - mean_absolute_error: 0.0046 -
      val_loss: 32.1508 - val_mean_absolute_error: 3.6124
8581  epoch_end_callback epoch 8985 lr 7.8125e-06
8582  Epoch 8987/10000
8583   - 0s - loss: 1.5612e-04 - mean_absolute_error: 0.0046 -
      val_loss: 32.1386 - val_mean_absolute_error: 3.6120
8584  epoch_end_callback epoch 8986 lr 7.8125e-06
8585  Epoch 8988/10000
8586   - 0s - loss: 1.7103e-04 - mean_absolute_error: 0.0047 -
      val_loss: 32.1512 - val_mean_absolute_error: 3.6121
8587  epoch_end_callback epoch 8987 lr 7.8125e-06
8588  Epoch 8989/10000
8589   - 0s - loss: 1.6144e-04 - mean_absolute_error: 0.0040 -
      val_loss: 32.1423 - val_mean_absolute_error: 3.6116
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8590 epoch_end_callback epoch 8988 lr 7.8125e-06
8591 Epoch 8990/10000
8592  - 0s - loss: 1.5355e-04 - mean_absolute_error: 0.0041 -
     val_loss: 32.1607 - val_mean_absolute_error: 3.6122
8593
8594 Epoch 08990: saving model to ./model/
     model_Epoch8990_val_mean_absolute_error3.612.h5
8595 epoch_end_callback epoch 8989 lr 7.8125e-06
8596 Epoch 8991/10000
8597  - 0s - loss: 1.7107e-04 - mean_absolute_error: 0.0047 -
     val_loss: 32.1521 - val_mean_absolute_error: 3.6127
8598 epoch_end_callback epoch 8990 lr 7.8125e-06
8599 Epoch 8992/10000
8600  - 0s - loss: 1.5689e-04 - mean_absolute_error: 0.0047 -
     val_loss: 32.1509 - val_mean_absolute_error: 3.6123
8601 epoch_end_callback epoch 8991 lr 7.8125e-06
8602 Epoch 8993/10000
8603  - 0s - loss: 1.6765e-04 - mean_absolute_error: 0.0043 -
     val_loss: 32.1419 - val_mean_absolute_error: 3.6124
8604 epoch_end_callback epoch 8992 lr 7.8125e-06
8605 Epoch 8994/10000
8606  - 0s - loss: 1.6861e-04 - mean_absolute_error: 0.0038 -
     val_loss: 32.1534 - val_mean_absolute_error: 3.6120
8607 epoch_end_callback epoch 8993 lr 7.8125e-06
8608 Epoch 8995/10000
8609  - 0s - loss: 1.6008e-04 - mean_absolute_error: 0.0046 -
     val_loss: 32.1516 - val_mean_absolute_error: 3.6124
8610 epoch_end_callback epoch 8994 lr 7.8125e-06
8611 Epoch 8996/10000
8612  - 0s - loss: 1.6560e-04 - mean_absolute_error: 0.0041 -
     val_loss: 32.1542 - val_mean_absolute_error: 3.6124
8613 epoch_end_callback epoch 8995 lr 7.8125e-06
8614 Epoch 8997/10000
8615  - 0s - loss: 1.6752e-04 - mean_absolute_error: 0.0043 -
     val_loss: 32.1474 - val_mean_absolute_error: 3.6120
8616 epoch_end_callback epoch 8996 lr 7.8125e-06
8617 Epoch 8998/10000
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8618    - 0s - loss: 1.5078e-04 - mean_absolute_error: 0.0043 -
        val_loss: 32.1512 - val_mean_absolute_error: 3.6119
8619  epoch_end_callback epoch 8997 lr 7.8125e-06
8620  Epoch 8999/10000
8621    - 0s - loss: 1.5737e-04 - mean_absolute_error: 0.0045 -
        val_loss: 32.1484 - val_mean_absolute_error: 3.6118
8622  epoch_end_callback epoch 8998 lr 7.8125e-06
8623  Epoch 9000/10000
8624    - 0s - loss: 1.6396e-04 - mean_absolute_error: 0.0041 -
        val_loss: 32.1450 - val_mean_absolute_error: 3.6127
8625
8626  Epoch 09000: saving model to ./model/
        model_Epoch9000_val_mean_absolute_error3.613.h5
8627  epoch_end_callback epoch 8999 lr 7.8125e-06
8628  Epoch 9001/10000
8629    - 0s - loss: 1.6039e-04 - mean_absolute_error: 0.0043 -
        val_loss: 32.1456 - val_mean_absolute_error: 3.6118
8630  epoch_end_callback epoch 9000 lr 7.8125e-06
8631  Epoch 9002/10000
8632    - 0s - loss: 1.5536e-04 - mean_absolute_error: 0.0040 -
        val_loss: 32.1489 - val_mean_absolute_error: 3.6123
8633  epoch_end_callback epoch 9001 lr 7.8125e-06
8634  Epoch 9003/10000
8635    - 0s - loss: 1.5864e-04 - mean_absolute_error: 0.0042 -
        val_loss: 32.1438 - val_mean_absolute_error: 3.6118
8636  epoch_end_callback epoch 9002 lr 7.8125e-06
8637  Epoch 9004/10000
8638    - 0s - loss: 1.6623e-04 - mean_absolute_error: 0.0046 -
        val_loss: 32.1442 - val_mean_absolute_error: 3.6123
8639  epoch_end_callback epoch 9003 lr 7.8125e-06
8640  Epoch 9005/10000
8641    - 0s - loss: 1.6211e-04 - mean_absolute_error: 0.0036 -
        val_loss: 32.1541 - val_mean_absolute_error: 3.6133
8642  epoch_end_callback epoch 9004 lr 7.8125e-06
8643  Epoch 9006/10000
8644    - 0s - loss: 1.6300e-04 - mean_absolute_error: 0.0042 -
        val_loss: 32.1360 - val_mean_absolute_error: 3.6118
```

8645 epoch_end_callback epoch 9005 lr 7.8125e-06

8646 Epoch 9007/10000

8647 - 0s - loss: 1.5845e-04 - mean_absolute_error: 0.0046 - val_loss: 32.1530 - val_mean_absolute_error: 3.6122

8648 epoch_end_callback epoch 9006 lr 7.8125e-06

8649 Epoch 9008/10000

8650 - 0s - loss: 1.7283e-04 - mean_absolute_error: 0.0041 - val_loss: 32.1559 - val_mean_absolute_error: 3.6123

8651 epoch_end_callback epoch 9007 lr 7.8125e-06

8652 Epoch 9009/10000

8653 - 0s - loss: 1.5697e-04 - mean_absolute_error: 0.0039 - val_loss: 32.1506 - val_mean_absolute_error: 3.6124

8654 epoch_end_callback epoch 9008 lr 7.8125e-06

8655 Epoch 9010/10000

8656 - 0s - loss: 1.7030e-04 - mean_absolute_error: 0.0041 - val_loss: 32.1647 - val_mean_absolute_error: 3.6137

8657

8658 Epoch 09010: saving model to ./model/model_Epoch9010_val_mean_absolute_error3.614.h5

8659 epoch_end_callback epoch 9009 lr 7.8125e-06

8660 Epoch 9011/10000

8661 - 0s - loss: 1.6161e-04 - mean_absolute_error: 0.0047 - val_loss: 32.1486 - val_mean_absolute_error: 3.6125

8662 epoch_end_callback epoch 9010 lr 7.8125e-06

8663 Epoch 9012/10000

8664 - 0s - loss: 1.5762e-04 - mean_absolute_error: 0.0046 - val_loss: 32.1483 - val_mean_absolute_error: 3.6123

8665 epoch_end_callback epoch 9011 lr 7.8125e-06

8666 Epoch 9013/10000

8667 - 0s - loss: 1.6311e-04 - mean_absolute_error: 0.0043 - val_loss: 32.1447 - val_mean_absolute_error: 3.6122

8668 epoch_end_callback epoch 9012 lr 7.8125e-06

8669 Epoch 9014/10000

8670 - 0s - loss: 1.3587e-04 - mean_absolute_error: 0.0039 - val_loss: 32.1562 - val_mean_absolute_error: 3.6125

8671 epoch_end_callback epoch 9013 lr 7.8125e-06

8672 Epoch 9015/10000

```
8673   - 0s - loss: 1.6396e-04 - mean_absolute_error: 0.0046 -
       val_loss: 32.1559 - val_mean_absolute_error: 3.6124
8674  epoch_end_callback epoch 9014 lr 7.8125e-06
8675  Epoch 9016/10000
8676   - 0s - loss: 1.6350e-04 - mean_absolute_error: 0.0046 -
       val_loss: 32.1570 - val_mean_absolute_error: 3.6124
8677  epoch_end_callback epoch 9015 lr 7.8125e-06
8678  Epoch 9017/10000
8679   - 0s - loss: 1.5263e-04 - mean_absolute_error: 0.0041 -
       val_loss: 32.1600 - val_mean_absolute_error: 3.6127
8680  epoch_end_callback epoch 9016 lr 7.8125e-06
8681  Epoch 9018/10000
8682   - 0s - loss: 1.6490e-04 - mean_absolute_error: 0.0047 -
       val_loss: 32.1542 - val_mean_absolute_error: 3.6129
8683  epoch_end_callback epoch 9017 lr 7.8125e-06
8684  Epoch 9019/10000
8685   - 0s - loss: 1.5426e-04 - mean_absolute_error: 0.0039 -
       val_loss: 32.1512 - val_mean_absolute_error: 3.6123
8686  epoch_end_callback epoch 9018 lr 7.8125e-06
8687  Epoch 9020/10000
8688   - 0s - loss: 1.7466e-04 - mean_absolute_error: 0.0042 -
       val_loss: 32.1459 - val_mean_absolute_error: 3.6123
8689
8690  Epoch 09020: saving model to ./model/
       model_Epoch9020_val_mean_absolute_error3.612.h5
8691  epoch_end_callback epoch 9019 lr 7.8125e-06
8692  Epoch 9021/10000
8693   - 0s - loss: 1.6092e-04 - mean_absolute_error: 0.0042 -
       val_loss: 32.1464 - val_mean_absolute_error: 3.6117
8694  epoch_end_callback epoch 9020 lr 7.8125e-06
8695  Epoch 9022/10000
8696   - 0s - loss: 1.6256e-04 - mean_absolute_error: 0.0044 -
       val_loss: 32.1479 - val_mean_absolute_error: 3.6115
8697  epoch_end_callback epoch 9021 lr 7.8125e-06
8698  Epoch 9023/10000
8699   - 0s - loss: 1.5843e-04 - mean_absolute_error: 0.0042 -
       val_loss: 32.1499 - val_mean_absolute_error: 3.6127
```

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8700 epoch_end_callback epoch 9022 lr 7.8125e-06
8701 Epoch 9024/10000
8702  - 0s - loss: 1.5974e-04 - mean_absolute_error: 0.0046 -
     val_loss: 32.1435 - val_mean_absolute_error: 3.6123
8703 epoch_end_callback epoch 9023 lr 7.8125e-06
8704 Epoch 9025/10000
8705  - 0s - loss: 1.5875e-04 - mean_absolute_error: 0.0041 -
     val_loss: 32.1524 - val_mean_absolute_error: 3.6124
8706 epoch_end_callback epoch 9024 lr 7.8125e-06
8707 Epoch 9026/10000
8708  - 0s - loss: 1.6120e-04 - mean_absolute_error: 0.0045 -
     val_loss: 32.1541 - val_mean_absolute_error: 3.6128
8709 epoch_end_callback epoch 9025 lr 7.8125e-06
8710 Epoch 9027/10000
8711  - 0s - loss: 1.6346e-04 - mean_absolute_error: 0.0044 -
     val_loss: 32.1616 - val_mean_absolute_error: 3.6126
8712 epoch_end_callback epoch 9026 lr 7.8125e-06
8713 Epoch 9028/10000
8714  - 0s - loss: 1.5536e-04 - mean_absolute_error: 0.0040 -
     val_loss: 32.1485 - val_mean_absolute_error: 3.6132
8715 epoch_end_callback epoch 9027 lr 7.8125e-06
8716 Epoch 9029/10000
8717  - 0s - loss: 1.5789e-04 - mean_absolute_error: 0.0044 -
     val_loss: 32.1455 - val_mean_absolute_error: 3.6118
8718 epoch_end_callback epoch 9028 lr 7.8125e-06
8719 Epoch 9030/10000
8720  - 0s - loss: 1.6142e-04 - mean_absolute_error: 0.0045 -
     val_loss: 32.1566 - val_mean_absolute_error: 3.6126
8721
8722 Epoch 09030: saving model to ./model/
     model_Epoch9030_val_mean_absolute_error3.613.h5
8723 epoch_end_callback epoch 9029 lr 7.8125e-06
8724 Epoch 9031/10000
8725  - 0s - loss: 1.6024e-04 - mean_absolute_error: 0.0044 -
     val_loss: 32.1563 - val_mean_absolute_error: 3.6126
8726 epoch_end_callback epoch 9030 lr 7.8125e-06
8727 Epoch 9032/10000
```

```
8728    - 0s - loss: 1.6918e-04 - mean_absolute_error: 0.0043 -
        val_loss: 32.1469 - val_mean_absolute_error: 3.6122
8729  epoch_end_callback epoch 9031 lr 7.8125e-06
8730  Epoch 9033/10000
8731    - 0s - loss: 1.4961e-04 - mean_absolute_error: 0.0039 -
        val_loss: 32.1514 - val_mean_absolute_error: 3.6130
8732  epoch_end_callback epoch 9032 lr 7.8125e-06
8733  Epoch 9034/10000
8734    - 0s - loss: 1.6149e-04 - mean_absolute_error: 0.0044 -
        val_loss: 32.1682 - val_mean_absolute_error: 3.6128
8735  epoch_end_callback epoch 9033 lr 7.8125e-06
8736  Epoch 9035/10000
8737    - 0s - loss: 1.6878e-04 - mean_absolute_error: 0.0047 -
        val_loss: 32.1523 - val_mean_absolute_error: 3.6125
8738  epoch_end_callback epoch 9034 lr 7.8125e-06
8739  Epoch 9036/10000
8740    - 0s - loss: 1.7041e-04 - mean_absolute_error: 0.0043 -
        val_loss: 32.1572 - val_mean_absolute_error: 3.6115
8741  epoch_end_callback epoch 9035 lr 7.8125e-06
8742  Epoch 9037/10000
8743    - 0s - loss: 1.4241e-04 - mean_absolute_error: 0.0037 -
        val_loss: 32.1251 - val_mean_absolute_error: 3.6119
8744  epoch_end_callback epoch 9036 lr 7.8125e-06
8745  Epoch 9038/10000
8746    - 0s - loss: 1.6583e-04 - mean_absolute_error: 0.0048 -
        val_loss: 32.1565 - val_mean_absolute_error: 3.6127
8747  epoch_end_callback epoch 9037 lr 7.8125e-06
8748  Epoch 9039/10000
8749    - 0s - loss: 1.3789e-04 - mean_absolute_error: 0.0036 -
        val_loss: 32.1486 - val_mean_absolute_error: 3.6128
8750  epoch_end_callback epoch 9038 lr 7.8125e-06
8751  Epoch 9040/10000
8752    - 0s - loss: 1.7025e-04 - mean_absolute_error: 0.0046 -
        val_loss: 32.1560 - val_mean_absolute_error: 3.6127
8753
8754  Epoch 09040: saving model to ./model/
      model_Epoch9040_val_mean_absolute_error3.613.h5
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8755  epoch_end_callback epoch 9039 lr 7.8125e-06
8756  Epoch 9041/10000
8757   - 0s - loss: 1.5659e-04 - mean_absolute_error: 0.0041 -
      val_loss: 32.1510 - val_mean_absolute_error: 3.6129
8758  epoch_end_callback epoch 9040 lr 7.8125e-06
8759  Epoch 9042/10000
8760   - 0s - loss: 1.3911e-04 - mean_absolute_error: 0.0039 -
      val_loss: 32.1512 - val_mean_absolute_error: 3.6119
8761  epoch_end_callback epoch 9041 lr 7.8125e-06
8762  Epoch 9043/10000
8763   - 0s - loss: 1.6137e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1714 - val_mean_absolute_error: 3.6136
8764  epoch_end_callback epoch 9042 lr 7.8125e-06
8765  Epoch 9044/10000
8766   - 0s - loss: 1.6380e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1604 - val_mean_absolute_error: 3.6126
8767  epoch_end_callback epoch 9043 lr 7.8125e-06
8768  Epoch 9045/10000
8769   - 0s - loss: 1.6591e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1479 - val_mean_absolute_error: 3.6122
8770  epoch_end_callback epoch 9044 lr 7.8125e-06
8771  Epoch 9046/10000
8772   - 0s - loss: 1.5553e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1558 - val_mean_absolute_error: 3.6127
8773  epoch_end_callback epoch 9045 lr 7.8125e-06
8774  Epoch 9047/10000
8775   - 0s - loss: 1.6147e-04 - mean_absolute_error: 0.0040 -
      val_loss: 32.1578 - val_mean_absolute_error: 3.6129
8776  epoch_end_callback epoch 9046 lr 7.8125e-06
8777  Epoch 9048/10000
8778   - 0s - loss: 1.5342e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1489 - val_mean_absolute_error: 3.6133
8779  epoch_end_callback epoch 9047 lr 7.8125e-06
8780  Epoch 9049/10000
8781   - 0s - loss: 1.6896e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1390 - val_mean_absolute_error: 3.6112
8782  epoch_end_callback epoch 9048 lr 7.8125e-06
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8783  Epoch 9050/10000
8784   - 0s - loss: 1.6261e-04 - mean_absolute_error: 0.0042 -
       val_loss: 32.1494 - val_mean_absolute_error: 3.6120
8785
8786  Epoch 09050: saving model to ./model/
       model_Epoch9050_val_mean_absolute_error3.612.h5
8787  epoch_end_callback epoch 9049 lr 7.8125e-06
8788  Epoch 9051/10000
8789   - 0s - loss: 1.3085e-04 - mean_absolute_error: 0.0035 -
       val_loss: 32.1555 - val_mean_absolute_error: 3.6121
8790  epoch_end_callback epoch 9050 lr 7.8125e-06
8791  Epoch 9052/10000
8792   - 0s - loss: 1.6474e-04 - mean_absolute_error: 0.0044 -
       val_loss: 32.1441 - val_mean_absolute_error: 3.6120
8793  epoch_end_callback epoch 9051 lr 7.8125e-06
8794  Epoch 9053/10000
8795   - 0s - loss: 1.3681e-04 - mean_absolute_error: 0.0042 -
       val_loss: 32.1599 - val_mean_absolute_error: 3.6127
8796  epoch_end_callback epoch 9052 lr 7.8125e-06
8797  Epoch 9054/10000
8798   - 0s - loss: 1.6488e-04 - mean_absolute_error: 0.0047 -
       val_loss: 32.1409 - val_mean_absolute_error: 3.6125
8799  epoch_end_callback epoch 9053 lr 7.8125e-06
8800  Epoch 9055/10000
8801   - 0s - loss: 1.7740e-04 - mean_absolute_error: 0.0044 -
       val_loss: 32.1491 - val_mean_absolute_error: 3.6123
8802  epoch_end_callback epoch 9054 lr 7.8125e-06
8803  Epoch 9056/10000
8804   - 0s - loss: 1.5424e-04 - mean_absolute_error: 0.0040 -
       val_loss: 32.1530 - val_mean_absolute_error: 3.6124
8805  epoch_end_callback epoch 9055 lr 7.8125e-06
8806  Epoch 9057/10000
8807   - 0s - loss: 1.6349e-04 - mean_absolute_error: 0.0039 -
       val_loss: 32.1510 - val_mean_absolute_error: 3.6125
8808  epoch_end_callback epoch 9056 lr 7.8125e-06
8809  Epoch 9058/10000
8810   - 0s - loss: 1.7395e-04 - mean_absolute_error: 0.0044 -
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8810 val_loss: 32.1491 - val_mean_absolute_error: 3.6126
8811 epoch_end_callback epoch 9057 lr 7.8125e-06
8812 Epoch 9059/10000
8813 - 0s - loss: 1.5379e-04 - mean_absolute_error: 0.0045 - val_loss: 32.1547 - val_mean_absolute_error: 3.6124
8814 epoch_end_callback epoch 9058 lr 7.8125e-06
8815 Epoch 9060/10000
8816 - 0s - loss: 1.5946e-04 - mean_absolute_error: 0.0037 - val_loss: 32.1530 - val_mean_absolute_error: 3.6130
8817
8818 Epoch 09060: saving model to ./model/model_Epoch9060_val_mean_absolute_error3.613.h5
8819 epoch_end_callback epoch 9059 lr 7.8125e-06
8820 Epoch 9061/10000
8821 - 0s - loss: 1.6470e-04 - mean_absolute_error: 0.0044 - val_loss: 32.1551 - val_mean_absolute_error: 3.6130
8822 epoch_end_callback epoch 9060 lr 7.8125e-06
8823 Epoch 9062/10000
8824 - 0s - loss: 1.4922e-04 - mean_absolute_error: 0.0041 - val_loss: 32.1378 - val_mean_absolute_error: 3.6129
8825 epoch_end_callback epoch 9061 lr 7.8125e-06
8826 Epoch 9063/10000
8827 - 0s - loss: 1.5925e-04 - mean_absolute_error: 0.0050 - val_loss: 32.1725 - val_mean_absolute_error: 3.6138
8828 epoch_end_callback epoch 9062 lr 7.8125e-06
8829 Epoch 9064/10000
8830 - 0s - loss: 1.5048e-04 - mean_absolute_error: 0.0040 - val_loss: 32.1482 - val_mean_absolute_error: 3.6125
8831 epoch_end_callback epoch 9063 lr 7.8125e-06
8832 Epoch 9065/10000
8833 - 0s - loss: 1.5540e-04 - mean_absolute_error: 0.0041 - val_loss: 32.1543 - val_mean_absolute_error: 3.6130
8834 epoch_end_callback epoch 9064 lr 7.8125e-06
8835 Epoch 9066/10000
8836 - 0s - loss: 1.6121e-04 - mean_absolute_error: 0.0043 - val_loss: 32.1544 - val_mean_absolute_error: 3.6126
8837 epoch_end_callback epoch 9065 lr 7.8125e-06

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8838  Epoch 9067/10000
8839   - 0s - loss: 1.6167e-04 - mean_absolute_error: 0.0040 -
       val_loss: 32.1501 - val_mean_absolute_error: 3.6128
8840  epoch_end_callback epoch 9066 lr 7.8125e-06
8841  Epoch 9068/10000
8842   - 0s - loss: 1.5453e-04 - mean_absolute_error: 0.0042 -
       val_loss: 32.1592 - val_mean_absolute_error: 3.6121
8843  epoch_end_callback epoch 9067 lr 7.8125e-06
8844  Epoch 9069/10000
8845   - 0s - loss: 1.5714e-04 - mean_absolute_error: 0.0044 -
       val_loss: 32.1621 - val_mean_absolute_error: 3.6130
8846  epoch_end_callback epoch 9068 lr 7.8125e-06
8847  Epoch 9070/10000
8848   - 0s - loss: 1.6304e-04 - mean_absolute_error: 0.0047 -
       val_loss: 32.1559 - val_mean_absolute_error: 3.6127
8849
8850  Epoch 09070: saving model to ./model/
       model_Epoch9070_val_mean_absolute_error3.613.h5
8851  epoch_end_callback epoch 9069 lr 7.8125e-06
8852  Epoch 9071/10000
8853   - 0s - loss: 1.5708e-04 - mean_absolute_error: 0.0044 -
       val_loss: 32.1560 - val_mean_absolute_error: 3.6128
8854  epoch_end_callback epoch 9070 lr 7.8125e-06
8855  Epoch 9072/10000
8856   - 0s - loss: 1.6169e-04 - mean_absolute_error: 0.0044 -
       val_loss: 32.1501 - val_mean_absolute_error: 3.6123
8857  epoch_end_callback epoch 9071 lr 7.8125e-06
8858  Epoch 9073/10000
8859   - 0s - loss: 1.4835e-04 - mean_absolute_error: 0.0043 -
       val_loss: 32.1505 - val_mean_absolute_error: 3.6130
8860  epoch_end_callback epoch 9072 lr 7.8125e-06
8861  Epoch 9074/10000
8862   - 0s - loss: 1.5250e-04 - mean_absolute_error: 0.0049 -
       val_loss: 32.1641 - val_mean_absolute_error: 3.6132
8863  epoch_end_callback epoch 9073 lr 7.8125e-06
8864  Epoch 9075/10000
8865   - 0s - loss: 1.5652e-04 - mean_absolute_error: 0.0042 -
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8865  val_loss: 32.1696 - val_mean_absolute_error: 3.6132
8866  epoch_end_callback epoch 9074 lr 7.8125e-06
8867  Epoch 9076/10000
8868   - 0s - loss: 1.5318e-04 - mean_absolute_error: 0.0040 -
      val_loss: 32.1610 - val_mean_absolute_error: 3.6130
8869  epoch_end_callback epoch 9075 lr 7.8125e-06
8870  Epoch 9077/10000
8871   - 0s - loss: 1.6027e-04 - mean_absolute_error: 0.0046 -
      val_loss: 32.1427 - val_mean_absolute_error: 3.6129
8872  epoch_end_callback epoch 9076 lr 7.8125e-06
8873  Epoch 9078/10000
8874   - 0s - loss: 1.5173e-04 - mean_absolute_error: 0.0047 -
      val_loss: 32.1582 - val_mean_absolute_error: 3.6128
8875  epoch_end_callback epoch 9077 lr 7.8125e-06
8876  Epoch 9079/10000
8877   - 0s - loss: 1.6182e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1645 - val_mean_absolute_error: 3.6129
8878  epoch_end_callback epoch 9078 lr 7.8125e-06
8879  Epoch 9080/10000
8880   - 0s - loss: 1.6215e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1519 - val_mean_absolute_error: 3.6119
8881
8882  Epoch 09080: saving model to ./model/
      model_Epoch9080_val_mean_absolute_error3.612.h5
8883  epoch_end_callback epoch 9079 lr 7.8125e-06
8884  Epoch 9081/10000
8885   - 0s - loss: 1.5963e-04 - mean_absolute_error: 0.0040 -
      val_loss: 32.1562 - val_mean_absolute_error: 3.6129
8886  epoch_end_callback epoch 9080 lr 7.8125e-06
8887  Epoch 9082/10000
8888   - 0s - loss: 1.7130e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1472 - val_mean_absolute_error: 3.6121
8889  epoch_end_callback epoch 9081 lr 7.8125e-06
8890  Epoch 9083/10000
8891   - 0s - loss: 1.5477e-04 - mean_absolute_error: 0.0041 -
      val_loss: 32.1429 - val_mean_absolute_error: 3.6124
8892  epoch_end_callback epoch 9082 lr 7.8125e-06
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8893  Epoch 9084/10000
8894   - 0s - loss: 1.6591e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1531 - val_mean_absolute_error: 3.6126
8895  epoch_end_callback epoch 9083 lr 7.8125e-06
8896  Epoch 9085/10000
8897   - 0s - loss: 1.5160e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1604 - val_mean_absolute_error: 3.6129
8898  epoch_end_callback epoch 9084 lr 7.8125e-06
8899  Epoch 9086/10000
8900   - 0s - loss: 1.6241e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1587 - val_mean_absolute_error: 3.6131
8901  epoch_end_callback epoch 9085 lr 7.8125e-06
8902  Epoch 9087/10000
8903   - 0s - loss: 1.3606e-04 - mean_absolute_error: 0.0040 -
      val_loss: 32.1567 - val_mean_absolute_error: 3.6126
8904  epoch_end_callback epoch 9086 lr 7.8125e-06
8905  Epoch 9088/10000
8906   - 0s - loss: 1.6185e-04 - mean_absolute_error: 0.0040 -
      val_loss: 32.1490 - val_mean_absolute_error: 3.6113
8907  epoch_end_callback epoch 9087 lr 7.8125e-06
8908  Epoch 9089/10000
8909   - 0s - loss: 1.6263e-04 - mean_absolute_error: 0.0049 -
      val_loss: 32.1410 - val_mean_absolute_error: 3.6122
8910  epoch_end_callback epoch 9088 lr 7.8125e-06
8911  Epoch 9090/10000
8912   - 0s - loss: 1.6109e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1562 - val_mean_absolute_error: 3.6129
8913
8914  Epoch 09090: saving model to ./model/
      model_Epoch9090_val_mean_absolute_error3.613.h5
8915  epoch_end_callback epoch 9089 lr 7.8125e-06
8916  Epoch 9091/10000
8917   - 0s - loss: 1.3538e-04 - mean_absolute_error: 0.0037 -
      val_loss: 32.1550 - val_mean_absolute_error: 3.6131
8918  epoch_end_callback epoch 9090 lr 7.8125e-06
8919  Epoch 9092/10000
8920   - 0s - loss: 1.6703e-04 - mean_absolute_error: 0.0044 -
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8920  val_loss: 32.1501 - val_mean_absolute_error: 3.6139
8921  epoch_end_callback epoch 9091 lr 7.8125e-06
8922  Epoch 9093/10000
8923   - 0s - loss: 1.5340e-04 - mean_absolute_error: 0.0039 -
      val_loss: 32.1582 - val_mean_absolute_error: 3.6137
8924  epoch_end_callback epoch 9092 lr 7.8125e-06
8925  Epoch 9094/10000
8926   - 0s - loss: 1.6578e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1830 - val_mean_absolute_error: 3.6142
8927  epoch_end_callback epoch 9093 lr 7.8125e-06
8928  Epoch 9095/10000
8929   - 0s - loss: 1.4175e-04 - mean_absolute_error: 0.0037 -
      val_loss: 32.1472 - val_mean_absolute_error: 3.6125
8930  epoch_end_callback epoch 9094 lr 7.8125e-06
8931  Epoch 9096/10000
8932   - 0s - loss: 1.5944e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1631 - val_mean_absolute_error: 3.6130
8933  epoch_end_callback epoch 9095 lr 7.8125e-06
8934  Epoch 9097/10000
8935   - 0s - loss: 1.5002e-04 - mean_absolute_error: 0.0037 -
      val_loss: 32.1482 - val_mean_absolute_error: 3.6123
8936  epoch_end_callback epoch 9096 lr 7.8125e-06
8937  Epoch 9098/10000
8938   - 0s - loss: 1.7846e-04 - mean_absolute_error: 0.0047 -
      val_loss: 32.1647 - val_mean_absolute_error: 3.6132
8939  epoch_end_callback epoch 9097 lr 7.8125e-06
8940  Epoch 9099/10000
8941   - 0s - loss: 1.6570e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1520 - val_mean_absolute_error: 3.6123
8942  epoch_end_callback epoch 9098 lr 7.8125e-06
8943  Epoch 9100/10000
8944   - 0s - loss: 1.5522e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1564 - val_mean_absolute_error: 3.6130
8945
8946  Epoch 09100: saving model to ./model/
      model_Epoch9100_val_mean_absolute_error3.613.h5
8947  epoch_end_callback epoch 9099 lr 7.8125e-06
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8948  Epoch 9101/10000
8949   - 0s - loss: 1.5739e-04 - mean_absolute_error: 0.0040 -
      val_loss: 32.1590 - val_mean_absolute_error: 3.6127
8950  epoch_end_callback epoch 9100 lr 7.8125e-06
8951  Epoch 9102/10000
8952   - 0s - loss: 1.6583e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1578 - val_mean_absolute_error: 3.6128
8953  epoch_end_callback epoch 9101 lr 7.8125e-06
8954  Epoch 9103/10000
8955   - 0s - loss: 1.5488e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1544 - val_mean_absolute_error: 3.6127
8956  epoch_end_callback epoch 9102 lr 7.8125e-06
8957  Epoch 9104/10000
8958   - 0s - loss: 1.5909e-04 - mean_absolute_error: 0.0039 -
      val_loss: 32.1525 - val_mean_absolute_error: 3.6129
8959  epoch_end_callback epoch 9103 lr 7.8125e-06
8960  Epoch 9105/10000
8961   - 0s - loss: 1.6703e-04 - mean_absolute_error: 0.0046 -
      val_loss: 32.1564 - val_mean_absolute_error: 3.6129
8962  epoch_end_callback epoch 9104 lr 7.8125e-06
8963  Epoch 9106/10000
8964   - 0s - loss: 1.5246e-04 - mean_absolute_error: 0.0041 -
      val_loss: 32.1659 - val_mean_absolute_error: 3.6123
8965  epoch_end_callback epoch 9105 lr 7.8125e-06
8966  Epoch 9107/10000
8967   - 0s - loss: 1.7202e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1644 - val_mean_absolute_error: 3.6135
8968  epoch_end_callback epoch 9106 lr 7.8125e-06
8969  Epoch 9108/10000
8970   - 0s - loss: 1.6032e-04 - mean_absolute_error: 0.0040 -
      val_loss: 32.1530 - val_mean_absolute_error: 3.6133
8971  epoch_end_callback epoch 9107 lr 7.8125e-06
8972  Epoch 9109/10000
8973   - 0s - loss: 1.5735e-04 - mean_absolute_error: 0.0041 -
      val_loss: 32.1553 - val_mean_absolute_error: 3.6138
8974  epoch_end_callback epoch 9108 lr 7.8125e-06
8975  Epoch 9110/10000
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8976   - 0s - loss: 1.5187e-04 - mean_absolute_error: 0.0045 -
       val_loss: 32.1744 - val_mean_absolute_error: 3.6136
8977
8978 Epoch 09110: saving model to ./model/
     model_Epoch9110_val_mean_absolute_error3.614.h5
8979 epoch_end_callback epoch 9109 lr 7.8125e-06
8980 Epoch 9111/10000
8981   - 0s - loss: 1.5918e-04 - mean_absolute_error: 0.0042 -
       val_loss: 32.1560 - val_mean_absolute_error: 3.6134
8982 epoch_end_callback epoch 9110 lr 7.8125e-06
8983 Epoch 9112/10000
8984   - 0s - loss: 1.7860e-04 - mean_absolute_error: 0.0048 -
       val_loss: 32.1567 - val_mean_absolute_error: 3.6131
8985 epoch_end_callback epoch 9111 lr 7.8125e-06
8986 Epoch 9113/10000
8987   - 0s - loss: 1.5578e-04 - mean_absolute_error: 0.0041 -
       val_loss: 32.1592 - val_mean_absolute_error: 3.6129
8988 epoch_end_callback epoch 9112 lr 7.8125e-06
8989 Epoch 9114/10000
8990   - 0s - loss: 1.4894e-04 - mean_absolute_error: 0.0038 -
       val_loss: 32.1367 - val_mean_absolute_error: 3.6129
8991 epoch_end_callback epoch 9113 lr 7.8125e-06
8992 Epoch 9115/10000
8993   - 0s - loss: 1.5564e-04 - mean_absolute_error: 0.0041 -
       val_loss: 32.1617 - val_mean_absolute_error: 3.6121
8994 epoch_end_callback epoch 9114 lr 7.8125e-06
8995 Epoch 9116/10000
8996   - 0s - loss: 1.5417e-04 - mean_absolute_error: 0.0044 -
       val_loss: 32.1433 - val_mean_absolute_error: 3.6123
8997 epoch_end_callback epoch 9115 lr 7.8125e-06
8998 Epoch 9117/10000
8999   - 0s - loss: 1.3429e-04 - mean_absolute_error: 0.0038 -
       val_loss: 32.1506 - val_mean_absolute_error: 3.6127
9000 epoch_end_callback epoch 9116 lr 7.8125e-06
9001 Epoch 9118/10000
9002   - 0s - loss: 1.6405e-04 - mean_absolute_error: 0.0043 -
       val_loss: 32.1636 - val_mean_absolute_error: 3.6133
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9003  epoch_end_callback epoch 9117 lr 7.8125e-06
9004  Epoch 9119/10000
9005   - 0s - loss: 1.5732e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1533 - val_mean_absolute_error: 3.6124
9006  epoch_end_callback epoch 9118 lr 7.8125e-06
9007  Epoch 9120/10000
9008   - 0s - loss: 1.6596e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1648 - val_mean_absolute_error: 3.6130
9009
9010  Epoch 09120: saving model to ./model/
      model_Epoch9120_val_mean_absolute_error3.613.h5
9011  epoch_end_callback epoch 9119 lr 7.8125e-06
9012  Epoch 9121/10000
9013   - 0s - loss: 1.5792e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1552 - val_mean_absolute_error: 3.6124
9014  epoch_end_callback epoch 9120 lr 7.8125e-06
9015  Epoch 9122/10000
9016   - 0s - loss: 1.6101e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1456 - val_mean_absolute_error: 3.6123
9017  epoch_end_callback epoch 9121 lr 7.8125e-06
9018  Epoch 9123/10000
9019   - 0s - loss: 1.5791e-04 - mean_absolute_error: 0.0040 -
      val_loss: 32.1532 - val_mean_absolute_error: 3.6128
9020  epoch_end_callback epoch 9122 lr 7.8125e-06
9021  Epoch 9124/10000
9022   - 0s - loss: 1.5333e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1650 - val_mean_absolute_error: 3.6126
9023  epoch_end_callback epoch 9123 lr 7.8125e-06
9024  Epoch 9125/10000
9025   - 0s - loss: 1.5821e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1589 - val_mean_absolute_error: 3.6125
9026  epoch_end_callback epoch 9124 lr 7.8125e-06
9027  Epoch 9126/10000
9028   - 0s - loss: 1.6281e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1556 - val_mean_absolute_error: 3.6125
9029  epoch_end_callback epoch 9125 lr 7.8125e-06
9030  Epoch 9127/10000
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9031    - 0s - loss: 1.5529e-04 - mean_absolute_error: 0.0041 -
        val_loss: 32.1587 - val_mean_absolute_error: 3.6123
9032  epoch_end_callback epoch 9126 lr 7.8125e-06
9033  Epoch 9128/10000
9034    - 0s - loss: 1.6107e-04 - mean_absolute_error: 0.0046 -
        val_loss: 32.1708 - val_mean_absolute_error: 3.6134
9035  epoch_end_callback epoch 9127 lr 7.8125e-06
9036  Epoch 9129/10000
9037    - 0s - loss: 1.5887e-04 - mean_absolute_error: 0.0040 -
        val_loss: 32.1603 - val_mean_absolute_error: 3.6132
9038  epoch_end_callback epoch 9128 lr 7.8125e-06
9039  Epoch 9130/10000
9040    - 0s - loss: 1.5406e-04 - mean_absolute_error: 0.0044 -
        val_loss: 32.1645 - val_mean_absolute_error: 3.6132
9041
9042  Epoch 09130: saving model to ./model/
        model_Epoch9130_val_mean_absolute_error3.613.h5
9043  epoch_end_callback epoch 9129 lr 7.8125e-06
9044  Epoch 9131/10000
9045    - 0s - loss: 1.6060e-04 - mean_absolute_error: 0.0046 -
        val_loss: 32.1550 - val_mean_absolute_error: 3.6136
9046  epoch_end_callback epoch 9130 lr 7.8125e-06
9047  Epoch 9132/10000
9048    - 0s - loss: 1.3131e-04 - mean_absolute_error: 0.0036 -
        val_loss: 32.1608 - val_mean_absolute_error: 3.6125
9049  epoch_end_callback epoch 9131 lr 7.8125e-06
9050  Epoch 9133/10000
9051    - 0s - loss: 1.6031e-04 - mean_absolute_error: 0.0047 -
        val_loss: 32.1549 - val_mean_absolute_error: 3.6130
9052  epoch_end_callback epoch 9132 lr 7.8125e-06
9053  Epoch 9134/10000
9054    - 0s - loss: 1.5616e-04 - mean_absolute_error: 0.0039 -
        val_loss: 32.1592 - val_mean_absolute_error: 3.6133
9055  epoch_end_callback epoch 9133 lr 7.8125e-06
9056  Epoch 9135/10000
9057    - 0s - loss: 1.5547e-04 - mean_absolute_error: 0.0045 -
        val_loss: 32.1561 - val_mean_absolute_error: 3.6125
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9058  epoch_end_callback epoch 9134 lr 7.8125e-06
9059  Epoch 9136/10000
9060   - 0s - loss: 1.6161e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1706 - val_mean_absolute_error: 3.6136
9061  epoch_end_callback epoch 9135 lr 7.8125e-06
9062  Epoch 9137/10000
9063   - 0s - loss: 1.6079e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1592 - val_mean_absolute_error: 3.6138
9064  epoch_end_callback epoch 9136 lr 7.8125e-06
9065  Epoch 9138/10000
9066   - 0s - loss: 1.4503e-04 - mean_absolute_error: 0.0040 -
      val_loss: 32.1572 - val_mean_absolute_error: 3.6128
9067  epoch_end_callback epoch 9137 lr 7.8125e-06
9068  Epoch 9139/10000
9069   - 0s - loss: 1.6266e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1646 - val_mean_absolute_error: 3.6133
9070  epoch_end_callback epoch 9138 lr 7.8125e-06
9071  Epoch 9140/10000
9072   - 0s - loss: 1.5371e-04 - mean_absolute_error: 0.0040 -
      val_loss: 32.1552 - val_mean_absolute_error: 3.6124
9073
9074  Epoch 09140: saving model to ./model/
      model_Epoch9140_val_mean_absolute_error3.612.h5
9075  epoch_end_callback epoch 9139 lr 7.8125e-06
9076  Epoch 9141/10000
9077   - 0s - loss: 1.5947e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1573 - val_mean_absolute_error: 3.6140
9078  epoch_end_callback epoch 9140 lr 7.8125e-06
9079  Epoch 9142/10000
9080   - 0s - loss: 1.4726e-04 - mean_absolute_error: 0.0047 -
      val_loss: 32.1609 - val_mean_absolute_error: 3.6134
9081  epoch_end_callback epoch 9141 lr 7.8125e-06
9082  Epoch 9143/10000
9083   - 0s - loss: 1.6584e-04 - mean_absolute_error: 0.0046 -
      val_loss: 32.1554 - val_mean_absolute_error: 3.6134
9084  epoch_end_callback epoch 9142 lr 7.8125e-06
9085  Epoch 9144/10000
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9086   - 0s - loss: 1.5248e-04 - mean_absolute_error: 0.0038 -
       val_loss: 32.1637 - val_mean_absolute_error: 3.6133
9087  epoch_end_callback epoch 9143 lr 7.8125e-06
9088  Epoch 9145/10000
9089   - 0s - loss: 1.6092e-04 - mean_absolute_error: 0.0047 -
       val_loss: 32.1611 - val_mean_absolute_error: 3.6140
9090  epoch_end_callback epoch 9144 lr 7.8125e-06
9091  Epoch 9146/10000
9092   - 0s - loss: 1.6020e-04 - mean_absolute_error: 0.0047 -
       val_loss: 32.1555 - val_mean_absolute_error: 3.6127
9093  epoch_end_callback epoch 9145 lr 7.8125e-06
9094  Epoch 9147/10000
9095   - 0s - loss: 1.5639e-04 - mean_absolute_error: 0.0044 -
       val_loss: 32.1686 - val_mean_absolute_error: 3.6138
9096  epoch_end_callback epoch 9146 lr 7.8125e-06
9097  Epoch 9148/10000
9098   - 0s - loss: 1.5463e-04 - mean_absolute_error: 0.0044 -
       val_loss: 32.1523 - val_mean_absolute_error: 3.6127
9099  epoch_end_callback epoch 9147 lr 7.8125e-06
9100  Epoch 9149/10000
9101   - 0s - loss: 1.5723e-04 - mean_absolute_error: 0.0043 -
       val_loss: 32.1513 - val_mean_absolute_error: 3.6126
9102  epoch_end_callback epoch 9148 lr 7.8125e-06
9103  Epoch 9150/10000
9104   - 0s - loss: 1.4708e-04 - mean_absolute_error: 0.0044 -
       val_loss: 32.1615 - val_mean_absolute_error: 3.6132
9105
9106  Epoch 09150: saving model to ./model/
       model_Epoch9150_val_mean_absolute_error3.613.h5
9107  epoch_end_callback epoch 9149 lr 7.8125e-06
9108  Epoch 9151/10000
9109   - 0s - loss: 1.6240e-04 - mean_absolute_error: 0.0043 -
       val_loss: 32.1573 - val_mean_absolute_error: 3.6130
9110  epoch_end_callback epoch 9150 lr 7.8125e-06
9111  Epoch 9152/10000
9112   - 0s - loss: 1.5582e-04 - mean_absolute_error: 0.0044 -
       val_loss: 32.1531 - val_mean_absolute_error: 3.6130
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9113 epoch_end_callback epoch 9151 lr 7.8125e-06
9114 Epoch 9153/10000
9115  - 0s - loss: 1.5075e-04 - mean_absolute_error: 0.0041 -
     val_loss: 32.1548 - val_mean_absolute_error: 3.6121
9116 epoch_end_callback epoch 9152 lr 7.8125e-06
9117 Epoch 9154/10000
9118  - 0s - loss: 1.4873e-04 - mean_absolute_error: 0.0043 -
     val_loss: 32.1543 - val_mean_absolute_error: 3.6135
9119 epoch_end_callback epoch 9153 lr 7.8125e-06
9120 Epoch 9155/10000
9121  - 0s - loss: 1.5560e-04 - mean_absolute_error: 0.0046 -
     val_loss: 32.1537 - val_mean_absolute_error: 3.6131
9122 epoch_end_callback epoch 9154 lr 7.8125e-06
9123 Epoch 9156/10000
9124  - 0s - loss: 1.5988e-04 - mean_absolute_error: 0.0044 -
     val_loss: 32.1454 - val_mean_absolute_error: 3.6128
9125 epoch_end_callback epoch 9155 lr 7.8125e-06
9126 Epoch 9157/10000
9127  - 0s - loss: 1.5946e-04 - mean_absolute_error: 0.0045 -
     val_loss: 32.1624 - val_mean_absolute_error: 3.6133
9128 epoch_end_callback epoch 9156 lr 7.8125e-06
9129 Epoch 9158/10000
9130  - 0s - loss: 1.4806e-04 - mean_absolute_error: 0.0041 -
     val_loss: 32.1680 - val_mean_absolute_error: 3.6137
9131 epoch_end_callback epoch 9157 lr 7.8125e-06
9132 Epoch 9159/10000
9133  - 0s - loss: 1.6072e-04 - mean_absolute_error: 0.0038 -
     val_loss: 32.1564 - val_mean_absolute_error: 3.6124
9134 epoch_end_callback epoch 9158 lr 7.8125e-06
9135 Epoch 9160/10000
9136  - 0s - loss: 1.5547e-04 - mean_absolute_error: 0.0043 -
     val_loss: 32.1546 - val_mean_absolute_error: 3.6134
9137
9138 Epoch 09160: saving model to ./model/
     model_Epoch9160_val_mean_absolute_error3.613.h5
9139 epoch_end_callback epoch 9159 lr 7.8125e-06
9140 Epoch 9161/10000
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9141   - 0s - loss: 1.5398e-04 - mean_absolute_error: 0.0045 - val_loss: 32.1708 - val_mean_absolute_error: 3.6134
9142 epoch_end_callback epoch 9160 lr 7.8125e-06
9143 Epoch 9162/10000
9144   - 0s - loss: 1.5274e-04 - mean_absolute_error: 0.0040 - val_loss: 32.1521 - val_mean_absolute_error: 3.6131
9145 epoch_end_callback epoch 9161 lr 7.8125e-06
9146 Epoch 9163/10000
9147   - 0s - loss: 1.5445e-04 - mean_absolute_error: 0.0043 - val_loss: 32.1649 - val_mean_absolute_error: 3.6130
9148 epoch_end_callback epoch 9162 lr 7.8125e-06
9149 Epoch 9164/10000
9150   - 0s - loss: 1.5545e-04 - mean_absolute_error: 0.0042 - val_loss: 32.1890 - val_mean_absolute_error: 3.6146
9151 epoch_end_callback epoch 9163 lr 7.8125e-06
9152 Epoch 9165/10000
9153   - 0s - loss: 1.5089e-04 - mean_absolute_error: 0.0043 - val_loss: 32.1706 - val_mean_absolute_error: 3.6131
9154 epoch_end_callback epoch 9164 lr 7.8125e-06
9155 Epoch 9166/10000
9156   - 0s - loss: 1.3657e-04 - mean_absolute_error: 0.0042 - val_loss: 32.1586 - val_mean_absolute_error: 3.6126
9157 epoch_end_callback epoch 9165 lr 7.8125e-06
9158 Epoch 9167/10000
9159   - 0s - loss: 1.7581e-04 - mean_absolute_error: 0.0044 - val_loss: 32.1606 - val_mean_absolute_error: 3.6130
9160 epoch_end_callback epoch 9166 lr 7.8125e-06
9161 Epoch 9168/10000
9162   - 0s - loss: 1.4845e-04 - mean_absolute_error: 0.0041 - val_loss: 32.1594 - val_mean_absolute_error: 3.6127
9163 epoch_end_callback epoch 9167 lr 7.8125e-06
9164 Epoch 9169/10000
9165   - 0s - loss: 1.3898e-04 - mean_absolute_error: 0.0038 - val_loss: 32.1495 - val_mean_absolute_error: 3.6126
9166 epoch_end_callback epoch 9168 lr 7.8125e-06
9167 Epoch 9170/10000
9168   - 0s - loss: 1.5988e-04 - mean_absolute_error: 0.0044 -

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9168  val_loss: 32.1597 - val_mean_absolute_error: 3.6129
9169
9170  Epoch 09170: saving model to ./model/
      model_Epoch9170_val_mean_absolute_error3.613.h5
9171  epoch_end_callback epoch 9169 lr 7.8125e-06
9172  Epoch 9171/10000
9173   - 0s - loss: 1.5826e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1587 - val_mean_absolute_error: 3.6131
9174  epoch_end_callback epoch 9170 lr 7.8125e-06
9175  Epoch 9172/10000
9176   - 0s - loss: 1.4293e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1526 - val_mean_absolute_error: 3.6124
9177  epoch_end_callback epoch 9171 lr 7.8125e-06
9178  Epoch 9173/10000
9179   - 0s - loss: 1.6609e-04 - mean_absolute_error: 0.0047 -
      val_loss: 32.1613 - val_mean_absolute_error: 3.6132
9180  epoch_end_callback epoch 9172 lr 7.8125e-06
9181  Epoch 9174/10000
9182   - 0s - loss: 1.5050e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1593 - val_mean_absolute_error: 3.6132
9183  epoch_end_callback epoch 9173 lr 7.8125e-06
9184  Epoch 9175/10000
9185   - 0s - loss: 1.6514e-04 - mean_absolute_error: 0.0038 -
      val_loss: 32.1517 - val_mean_absolute_error: 3.6131
9186  epoch_end_callback epoch 9174 lr 7.8125e-06
9187  Epoch 9176/10000
9188   - 0s - loss: 1.5460e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1587 - val_mean_absolute_error: 3.6129
9189  epoch_end_callback epoch 9175 lr 7.8125e-06
9190  Epoch 9177/10000
9191   - 0s - loss: 1.5392e-04 - mean_absolute_error: 0.0048 -
      val_loss: 32.1653 - val_mean_absolute_error: 3.6136
9192  epoch_end_callback epoch 9176 lr 7.8125e-06
9193  Epoch 9178/10000
9194   - 0s - loss: 1.5812e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1579 - val_mean_absolute_error: 3.6131
9195  epoch_end_callback epoch 9177 lr 7.8125e-06
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9196  Epoch 9179/10000
9197   - 0s - loss: 1.4830e-04 - mean_absolute_error: 0.0039 -
       val_loss: 32.1509 - val_mean_absolute_error: 3.6124
9198  epoch_end_callback epoch 9178 lr 7.8125e-06
9199  Epoch 9180/10000
9200   - 0s - loss: 1.5537e-04 - mean_absolute_error: 0.0044 -
       val_loss: 32.1601 - val_mean_absolute_error: 3.6132
9201
9202  Epoch 09180: saving model to ./model/
       model_Epoch9180_val_mean_absolute_error3.613.h5
9203  epoch_end_callback epoch 9179 lr 7.8125e-06
9204  Epoch 9181/10000
9205   - 0s - loss: 1.5204e-04 - mean_absolute_error: 0.0042 -
       val_loss: 32.1641 - val_mean_absolute_error: 3.6130
9206  epoch_end_callback epoch 9180 lr 7.8125e-06
9207  Epoch 9182/10000
9208   - 0s - loss: 1.5960e-04 - mean_absolute_error: 0.0044 -
       val_loss: 32.1546 - val_mean_absolute_error: 3.6130
9209  epoch_end_callback epoch 9181 lr 7.8125e-06
9210  Epoch 9183/10000
9211   - 0s - loss: 1.4863e-04 - mean_absolute_error: 0.0040 -
       val_loss: 32.1541 - val_mean_absolute_error: 3.6128
9212  epoch_end_callback epoch 9182 lr 7.8125e-06
9213  Epoch 9184/10000
9214   - 0s - loss: 1.5737e-04 - mean_absolute_error: 0.0046 -
       val_loss: 32.1530 - val_mean_absolute_error: 3.6126
9215  epoch_end_callback epoch 9183 lr 7.8125e-06
9216  Epoch 9185/10000
9217   - 0s - loss: 1.5382e-04 - mean_absolute_error: 0.0044 -
       val_loss: 32.1604 - val_mean_absolute_error: 3.6132
9218  epoch_end_callback epoch 9184 lr 7.8125e-06
9219  Epoch 9186/10000
9220   - 0s - loss: 1.7033e-04 - mean_absolute_error: 0.0045 -
       val_loss: 32.1600 - val_mean_absolute_error: 3.6128
9221  epoch_end_callback epoch 9185 lr 7.8125e-06
9222  Epoch 9187/10000
9223   - 0s - loss: 1.5671e-04 - mean_absolute_error: 0.0038 -
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9223  val_loss: 32.1679 - val_mean_absolute_error: 3.6145
9224  epoch_end_callback epoch 9186 lr 7.8125e-06
9225  Epoch 9188/10000
9226   - 0s - loss: 1.5436e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1644 - val_mean_absolute_error: 3.6127
9227  epoch_end_callback epoch 9187 lr 7.8125e-06
9228  Epoch 9189/10000
9229   - 0s - loss: 1.5010e-04 - mean_absolute_error: 0.0041 -
      val_loss: 32.1666 - val_mean_absolute_error: 3.6134
9230  epoch_end_callback epoch 9188 lr 7.8125e-06
9231  Epoch 9190/10000
9232   - 0s - loss: 1.4777e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1743 - val_mean_absolute_error: 3.6134
9233
9234  Epoch 09190: saving model to ./model/
      model_Epoch9190_val_mean_absolute_error3.613.h5
9235  epoch_end_callback epoch 9189 lr 7.8125e-06
9236  Epoch 9191/10000
9237   - 0s - loss: 1.5882e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1597 - val_mean_absolute_error: 3.6133
9238  epoch_end_callback epoch 9190 lr 7.8125e-06
9239  Epoch 9192/10000
9240   - 0s - loss: 1.6770e-04 - mean_absolute_error: 0.0041 -
      val_loss: 32.1575 - val_mean_absolute_error: 3.6130
9241  epoch_end_callback epoch 9191 lr 7.8125e-06
9242  Epoch 9193/10000
9243   - 0s - loss: 1.4345e-04 - mean_absolute_error: 0.0041 -
      val_loss: 32.1660 - val_mean_absolute_error: 3.6134
9244  epoch_end_callback epoch 9192 lr 7.8125e-06
9245  Epoch 9194/10000
9246   - 0s - loss: 1.4900e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1664 - val_mean_absolute_error: 3.6131
9247  epoch_end_callback epoch 9193 lr 7.8125e-06
9248  Epoch 9195/10000
9249   - 0s - loss: 1.5724e-04 - mean_absolute_error: 0.0041 -
      val_loss: 32.1792 - val_mean_absolute_error: 3.6140
9250  epoch_end_callback epoch 9194 lr 7.8125e-06
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9251  Epoch 9196/10000
9252   - 0s - loss: 1.4265e-04 - mean_absolute_error: 0.0042 -
       val_loss: 32.1342 - val_mean_absolute_error: 3.6123
9253  epoch_end_callback epoch 9195 lr 7.8125e-06
9254  Epoch 9197/10000
9255   - 0s - loss: 1.6783e-04 - mean_absolute_error: 0.0046 -
       val_loss: 32.1661 - val_mean_absolute_error: 3.6131
9256  epoch_end_callback epoch 9196 lr 7.8125e-06
9257  Epoch 9198/10000
9258   - 0s - loss: 1.4550e-04 - mean_absolute_error: 0.0039 -
       val_loss: 32.1666 - val_mean_absolute_error: 3.6132
9259  epoch_end_callback epoch 9197 lr 7.8125e-06
9260  Epoch 9199/10000
9261   - 0s - loss: 1.4824e-04 - mean_absolute_error: 0.0041 -
       val_loss: 32.1595 - val_mean_absolute_error: 3.6129
9262  epoch_end_callback epoch 9198 lr 7.8125e-06
9263  Epoch 9200/10000
9264   - 0s - loss: 1.5669e-04 - mean_absolute_error: 0.0045 -
       val_loss: 32.1614 - val_mean_absolute_error: 3.6127
9265
9266  Epoch 09200: saving model to ./model/
       model_Epoch9200_val_mean_absolute_error3.613.h5
9267  epoch_end_callback epoch 9199 lr 7.8125e-06
9268  Epoch 9201/10000
9269   - 0s - loss: 1.5313e-04 - mean_absolute_error: 0.0042 -
       val_loss: 32.1654 - val_mean_absolute_error: 3.6128
9270  epoch_end_callback epoch 9200 lr 7.8125e-06
9271  Epoch 9202/10000
9272   - 0s - loss: 1.5460e-04 - mean_absolute_error: 0.0044 -
       val_loss: 32.1725 - val_mean_absolute_error: 3.6129
9273  epoch_end_callback epoch 9201 lr 7.8125e-06
9274  Epoch 9203/10000
9275   - 0s - loss: 1.5894e-04 - mean_absolute_error: 0.0042 -
       val_loss: 32.1668 - val_mean_absolute_error: 3.6129
9276  epoch_end_callback epoch 9202 lr 7.8125e-06
9277  Epoch 9204/10000
9278   - 0s - loss: 1.5939e-04 - mean_absolute_error: 0.0041 -
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9278  val_loss: 32.1624 - val_mean_absolute_error: 3.6129
9279  epoch_end_callback epoch 9203 lr 7.8125e-06
9280  Epoch 9205/10000
9281   - 0s - loss: 1.4604e-04 - mean_absolute_error: 0.0040 -
      val_loss: 32.1638 - val_mean_absolute_error: 3.6127
9282  epoch_end_callback epoch 9204 lr 7.8125e-06
9283  Epoch 9206/10000
9284   - 0s - loss: 1.4929e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1585 - val_mean_absolute_error: 3.6127
9285  epoch_end_callback epoch 9205 lr 7.8125e-06
9286  Epoch 9207/10000
9287   - 0s - loss: 1.7008e-04 - mean_absolute_error: 0.0046 -
      val_loss: 32.1503 - val_mean_absolute_error: 3.6125
9288  epoch_end_callback epoch 9206 lr 7.8125e-06
9289  Epoch 9208/10000
9290   - 0s - loss: 1.5743e-04 - mean_absolute_error: 0.0038 -
      val_loss: 32.1621 - val_mean_absolute_error: 3.6126
9291  epoch_end_callback epoch 9207 lr 7.8125e-06
9292  Epoch 9209/10000
9293   - 0s - loss: 1.5395e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1582 - val_mean_absolute_error: 3.6123
9294  epoch_end_callback epoch 9208 lr 7.8125e-06
9295  Epoch 9210/10000
9296   - 0s - loss: 1.5588e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1532 - val_mean_absolute_error: 3.6129
9297
9298  Epoch 09210: saving model to ./model/
      model_Epoch9210_val_mean_absolute_error3.613.h5
9299  epoch_end_callback epoch 9209 lr 7.8125e-06
9300  Epoch 9211/10000
9301   - 0s - loss: 1.5132e-04 - mean_absolute_error: 0.0040 -
      val_loss: 32.1294 - val_mean_absolute_error: 3.6119
9302  epoch_end_callback epoch 9210 lr 7.8125e-06
9303  Epoch 9212/10000
9304   - 0s - loss: 1.4708e-04 - mean_absolute_error: 0.0040 -
      val_loss: 32.1676 - val_mean_absolute_error: 3.6131
9305  epoch_end_callback epoch 9211 lr 7.8125e-06
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9306  Epoch 9213/10000
9307   - 0s - loss: 1.4773e-04 - mean_absolute_error: 0.0040 -
       val_loss: 32.1623 - val_mean_absolute_error: 3.6127
9308  epoch_end_callback epoch 9212 lr 7.8125e-06
9309  Epoch 9214/10000
9310   - 0s - loss: 1.5756e-04 - mean_absolute_error: 0.0045 -
       val_loss: 32.1606 - val_mean_absolute_error: 3.6135
9311  epoch_end_callback epoch 9213 lr 7.8125e-06
9312  Epoch 9215/10000
9313   - 0s - loss: 1.6234e-04 - mean_absolute_error: 0.0038 -
       val_loss: 32.1680 - val_mean_absolute_error: 3.6134
9314  epoch_end_callback epoch 9214 lr 7.8125e-06
9315  Epoch 9216/10000
9316   - 0s - loss: 1.3341e-04 - mean_absolute_error: 0.0033 -
       val_loss: 32.1617 - val_mean_absolute_error: 3.6131
9317  epoch_end_callback epoch 9215 lr 7.8125e-06
9318  Epoch 9217/10000
9319   - 0s - loss: 1.4903e-04 - mean_absolute_error: 0.0039 -
       val_loss: 32.1710 - val_mean_absolute_error: 3.6129
9320  epoch_end_callback epoch 9216 lr 7.8125e-06
9321  Epoch 9218/10000
9322   - 0s - loss: 1.4314e-04 - mean_absolute_error: 0.0038 -
       val_loss: 32.1625 - val_mean_absolute_error: 3.6130
9323  epoch_end_callback epoch 9217 lr 7.8125e-06
9324  Epoch 9219/10000
9325   - 0s - loss: 1.5352e-04 - mean_absolute_error: 0.0045 -
       val_loss: 32.1746 - val_mean_absolute_error: 3.6129
9326  epoch_end_callback epoch 9218 lr 7.8125e-06
9327  Epoch 9220/10000
9328   - 0s - loss: 1.4803e-04 - mean_absolute_error: 0.0043 -
       val_loss: 32.1726 - val_mean_absolute_error: 3.6136
9329
9330  Epoch 09220: saving model to ./model/
       model_Epoch9220_val_mean_absolute_error3.614.h5
9331  epoch_end_callback epoch 9219 lr 7.8125e-06
9332  Epoch 9221/10000
9333   - 0s - loss: 1.5823e-04 - mean_absolute_error: 0.0042 -
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9333  val_loss: 32.1571 - val_mean_absolute_error: 3.6119
9334  epoch_end_callback epoch 9220 lr 7.8125e-06
9335  Epoch 9222/10000
9336   - 0s - loss: 1.3813e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1680 - val_mean_absolute_error: 3.6134
9337  epoch_end_callback epoch 9221 lr 7.8125e-06
9338  Epoch 9223/10000
9339   - 0s - loss: 1.4977e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1653 - val_mean_absolute_error: 3.6132
9340  epoch_end_callback epoch 9222 lr 7.8125e-06
9341  Epoch 9224/10000
9342   - 0s - loss: 1.6277e-04 - mean_absolute_error: 0.0046 -
      val_loss: 32.1752 - val_mean_absolute_error: 3.6128
9343  epoch_end_callback epoch 9223 lr 7.8125e-06
9344  Epoch 9225/10000
9345   - 0s - loss: 1.5202e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1883 - val_mean_absolute_error: 3.6141
9346  epoch_end_callback epoch 9224 lr 7.8125e-06
9347  Epoch 9226/10000
9348   - 0s - loss: 1.4812e-04 - mean_absolute_error: 0.0040 -
      val_loss: 32.1481 - val_mean_absolute_error: 3.6137
9349  epoch_end_callback epoch 9225 lr 7.8125e-06
9350  Epoch 9227/10000
9351   - 0s - loss: 1.5397e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1652 - val_mean_absolute_error: 3.6132
9352  epoch_end_callback epoch 9226 lr 7.8125e-06
9353  Epoch 9228/10000
9354   - 0s - loss: 1.5963e-04 - mean_absolute_error: 0.0041 -
      val_loss: 32.1748 - val_mean_absolute_error: 3.6137
9355  epoch_end_callback epoch 9227 lr 7.8125e-06
9356  Epoch 9229/10000
9357   - 0s - loss: 1.5715e-04 - mean_absolute_error: 0.0041 -
      val_loss: 32.1706 - val_mean_absolute_error: 3.6127
9358  epoch_end_callback epoch 9228 lr 7.8125e-06
9359  Epoch 9230/10000
9360   - 0s - loss: 1.5570e-04 - mean_absolute_error: 0.0040 -
      val_loss: 32.1643 - val_mean_absolute_error: 3.6132
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9361
9362  Epoch 09230: saving model to ./model/
      model_Epoch9230_val_mean_absolute_error3.613.h5
9363  epoch_end_callback epoch 9229 lr 7.8125e-06
9364  Epoch 9231/10000
9365   - 0s - loss: 1.5615e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1352 - val_mean_absolute_error: 3.6136
9366  epoch_end_callback epoch 9230 lr 7.8125e-06
9367  Epoch 9232/10000
9368   - 0s - loss: 1.6363e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1620 - val_mean_absolute_error: 3.6130
9369  epoch_end_callback epoch 9231 lr 7.8125e-06
9370  Epoch 9233/10000
9371   - 0s - loss: 1.5865e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1604 - val_mean_absolute_error: 3.6130
9372  epoch_end_callback epoch 9232 lr 7.8125e-06
9373  Epoch 9234/10000
9374   - 0s - loss: 1.5699e-04 - mean_absolute_error: 0.0037 -
      val_loss: 32.1632 - val_mean_absolute_error: 3.6128
9375  epoch_end_callback epoch 9233 lr 7.8125e-06
9376  Epoch 9235/10000
9377   - 0s - loss: 1.5624e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1594 - val_mean_absolute_error: 3.6126
9378  epoch_end_callback epoch 9234 lr 7.8125e-06
9379  Epoch 9236/10000
9380   - 0s - loss: 1.5493e-04 - mean_absolute_error: 0.0046 -
      val_loss: 32.1646 - val_mean_absolute_error: 3.6138
9381  epoch_end_callback epoch 9235 lr 7.8125e-06
9382  Epoch 9237/10000
9383   - 0s - loss: 1.5352e-04 - mean_absolute_error: 0.0038 -
      val_loss: 32.1892 - val_mean_absolute_error: 3.6139
9384  epoch_end_callback epoch 9236 lr 7.8125e-06
9385  Epoch 9238/10000
9386   - 0s - loss: 1.4616e-04 - mean_absolute_error: 0.0039 -
      val_loss: 32.1591 - val_mean_absolute_error: 3.6128
9387  epoch_end_callback epoch 9237 lr 7.8125e-06
9388  Epoch 9239/10000
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9389    - 0s - loss: 1.4268e-04 - mean_absolute_error: 0.0041 -
        val_loss: 32.1752 - val_mean_absolute_error: 3.6136
9390  epoch_end_callback epoch 9238 lr 7.8125e-06
9391  Epoch 9240/10000
9392    - 0s - loss: 1.4515e-04 - mean_absolute_error: 0.0042 -
        val_loss: 32.1548 - val_mean_absolute_error: 3.6128
9393
9394  Epoch 09240: saving model to ./model/
        model_Epoch9240_val_mean_absolute_error3.613.h5
9395  epoch_end_callback epoch 9239 lr 7.8125e-06
9396  Epoch 9241/10000
9397    - 0s - loss: 1.5918e-04 - mean_absolute_error: 0.0045 -
        val_loss: 32.1562 - val_mean_absolute_error: 3.6130
9398  epoch_end_callback epoch 9240 lr 7.8125e-06
9399  Epoch 9242/10000
9400    - 0s - loss: 1.5124e-04 - mean_absolute_error: 0.0041 -
        val_loss: 32.1831 - val_mean_absolute_error: 3.6139
9401  epoch_end_callback epoch 9241 lr 7.8125e-06
9402  Epoch 9243/10000
9403    - 0s - loss: 1.5481e-04 - mean_absolute_error: 0.0041 -
        val_loss: 32.1611 - val_mean_absolute_error: 3.6129
9404  epoch_end_callback epoch 9242 lr 7.8125e-06
9405  Epoch 9244/10000
9406    - 0s - loss: 1.5829e-04 - mean_absolute_error: 0.0043 -
        val_loss: 32.1561 - val_mean_absolute_error: 3.6130
9407  epoch_end_callback epoch 9243 lr 7.8125e-06
9408  Epoch 9245/10000
9409    - 0s - loss: 1.6175e-04 - mean_absolute_error: 0.0043 -
        val_loss: 32.1590 - val_mean_absolute_error: 3.6131
9410  epoch_end_callback epoch 9244 lr 7.8125e-06
9411  Epoch 9246/10000
9412    - 0s - loss: 1.4804e-04 - mean_absolute_error: 0.0042 -
        val_loss: 32.1668 - val_mean_absolute_error: 3.6129
9413  epoch_end_callback epoch 9245 lr 7.8125e-06
9414  Epoch 9247/10000
9415    - 0s - loss: 1.2725e-04 - mean_absolute_error: 0.0039 -
        val_loss: 32.1551 - val_mean_absolute_error: 3.6136
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9416 epoch_end_callback epoch 9246 lr 7.8125e-06
9417 Epoch 9248/10000
9418  - 0s - loss: 1.6099e-04 - mean_absolute_error: 0.0048 -
     val_loss: 32.1570 - val_mean_absolute_error: 3.6131
9419 epoch_end_callback epoch 9247 lr 7.8125e-06
9420 Epoch 9249/10000
9421  - 0s - loss: 1.6234e-04 - mean_absolute_error: 0.0039 -
     val_loss: 32.1652 - val_mean_absolute_error: 3.6138
9422 epoch_end_callback epoch 9248 lr 7.8125e-06
9423 Epoch 9250/10000
9424  - 0s - loss: 1.5229e-04 - mean_absolute_error: 0.0046 -
     val_loss: 32.1657 - val_mean_absolute_error: 3.6130
9425
9426 Epoch 09250: saving model to ./model/
     model_Epoch9250_val_mean_absolute_error3.613.h5
9427 epoch_end_callback epoch 9249 lr 7.8125e-06
9428 Epoch 9251/10000
9429  - 0s - loss: 1.4028e-04 - mean_absolute_error: 0.0043 -
     val_loss: 32.1646 - val_mean_absolute_error: 3.6140
9430 epoch_end_callback epoch 9250 lr 7.8125e-06
9431 Epoch 9252/10000
9432  - 0s - loss: 1.5187e-04 - mean_absolute_error: 0.0042 -
     val_loss: 32.1561 - val_mean_absolute_error: 3.6125
9433 epoch_end_callback epoch 9251 lr 7.8125e-06
9434 Epoch 9253/10000
9435  - 0s - loss: 1.2850e-04 - mean_absolute_error: 0.0041 -
     val_loss: 32.1491 - val_mean_absolute_error: 3.6122
9436 epoch_end_callback epoch 9252 lr 7.8125e-06
9437 Epoch 9254/10000
9438  - 0s - loss: 1.6692e-04 - mean_absolute_error: 0.0049 -
     val_loss: 32.1538 - val_mean_absolute_error: 3.6122
9439 epoch_end_callback epoch 9253 lr 7.8125e-06
9440 Epoch 9255/10000
9441  - 0s - loss: 1.5586e-04 - mean_absolute_error: 0.0042 -
     val_loss: 32.1548 - val_mean_absolute_error: 3.6129
9442 epoch_end_callback epoch 9254 lr 7.8125e-06
9443 Epoch 9256/10000
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9444    - 0s - loss: 1.4725e-04 - mean_absolute_error: 0.0040 -
        val_loss: 32.1663 - val_mean_absolute_error: 3.6126
9445   epoch_end_callback epoch 9255 lr 7.8125e-06
9446   Epoch 9257/10000
9447    - 0s - loss: 1.6747e-04 - mean_absolute_error: 0.0043 -
        val_loss: 32.1665 - val_mean_absolute_error: 3.6129
9448   epoch_end_callback epoch 9256 lr 7.8125e-06
9449   Epoch 9258/10000
9450    - 0s - loss: 1.5648e-04 - mean_absolute_error: 0.0040 -
        val_loss: 32.1691 - val_mean_absolute_error: 3.6132
9451   epoch_end_callback epoch 9257 lr 7.8125e-06
9452   Epoch 9259/10000
9453    - 0s - loss: 1.5078e-04 - mean_absolute_error: 0.0040 -
        val_loss: 32.1680 - val_mean_absolute_error: 3.6131
9454   epoch_end_callback epoch 9258 lr 7.8125e-06
9455   Epoch 9260/10000
9456    - 0s - loss: 1.5259e-04 - mean_absolute_error: 0.0045 -
        val_loss: 32.1604 - val_mean_absolute_error: 3.6133
9457
9458   Epoch 09260: saving model to ./model/
        model_Epoch9260_val_mean_absolute_error3.613.h5
9459   epoch_end_callback epoch 9259 lr 7.8125e-06
9460   Epoch 9261/10000
9461    - 0s - loss: 1.4475e-04 - mean_absolute_error: 0.0045 -
        val_loss: 32.1649 - val_mean_absolute_error: 3.6123
9462   epoch_end_callback epoch 9260 lr 7.8125e-06
9463   Epoch 9262/10000
9464    - 0s - loss: 1.4515e-04 - mean_absolute_error: 0.0042 -
        val_loss: 32.1686 - val_mean_absolute_error: 3.6130
9465   epoch_end_callback epoch 9261 lr 7.8125e-06
9466   Epoch 9263/10000
9467    - 0s - loss: 1.5386e-04 - mean_absolute_error: 0.0044 -
        val_loss: 32.1627 - val_mean_absolute_error: 3.6131
9468   epoch_end_callback epoch 9262 lr 7.8125e-06
9469   Epoch 9264/10000
9470    - 0s - loss: 1.4969e-04 - mean_absolute_error: 0.0038 -
        val_loss: 32.1604 - val_mean_absolute_error: 3.6119
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9471 epoch_end_callback epoch 9263 lr 7.8125e-06
9472 Epoch 9265/10000
9473  - 0s - loss: 1.5677e-04 - mean_absolute_error: 0.0045 -
     val_loss: 32.1616 - val_mean_absolute_error: 3.6130
9474 epoch_end_callback epoch 9264 lr 7.8125e-06
9475 Epoch 9266/10000
9476  - 0s - loss: 1.5533e-04 - mean_absolute_error: 0.0044 -
     val_loss: 32.1598 - val_mean_absolute_error: 3.6131
9477 epoch_end_callback epoch 9265 lr 7.8125e-06
9478 Epoch 9267/10000
9479  - 0s - loss: 1.4685e-04 - mean_absolute_error: 0.0042 -
     val_loss: 32.1655 - val_mean_absolute_error: 3.6131
9480 epoch_end_callback epoch 9266 lr 7.8125e-06
9481 Epoch 9268/10000
9482  - 0s - loss: 1.6137e-04 - mean_absolute_error: 0.0042 -
     val_loss: 32.1660 - val_mean_absolute_error: 3.6134
9483 epoch_end_callback epoch 9267 lr 7.8125e-06
9484 Epoch 9269/10000
9485  - 0s - loss: 1.4918e-04 - mean_absolute_error: 0.0039 -
     val_loss: 32.1634 - val_mean_absolute_error: 3.6119
9486 epoch_end_callback epoch 9268 lr 7.8125e-06
9487 Epoch 9270/10000
9488  - 0s - loss: 1.4996e-04 - mean_absolute_error: 0.0045 -
     val_loss: 32.1611 - val_mean_absolute_error: 3.6130
9489
9490 Epoch 09270: saving model to ./model/
     model_Epoch9270_val_mean_absolute_error3.613.h5
9491 epoch_end_callback epoch 9269 lr 7.8125e-06
9492 Epoch 9271/10000
9493  - 0s - loss: 1.5679e-04 - mean_absolute_error: 0.0043 -
     val_loss: 32.1614 - val_mean_absolute_error: 3.6124
9494 epoch_end_callback epoch 9270 lr 7.8125e-06
9495 Epoch 9272/10000
9496  - 0s - loss: 1.5541e-04 - mean_absolute_error: 0.0044 -
     val_loss: 32.1551 - val_mean_absolute_error: 3.6125
9497 epoch_end_callback epoch 9271 lr 7.8125e-06
9498 Epoch 9273/10000
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9499    - 0s - loss: 1.4903e-04 - mean_absolute_error: 0.0039 -
        val_loss: 32.1672 - val_mean_absolute_error: 3.6139
9500  epoch_end_callback epoch 9272 lr 7.8125e-06
9501  Epoch 9274/10000
9502    - 0s - loss: 1.5444e-04 - mean_absolute_error: 0.0042 -
        val_loss: 32.1644 - val_mean_absolute_error: 3.6142
9503  epoch_end_callback epoch 9273 lr 7.8125e-06
9504  Epoch 9275/10000
9505    - 0s - loss: 1.4276e-04 - mean_absolute_error: 0.0042 -
        val_loss: 32.1636 - val_mean_absolute_error: 3.6138
9506  epoch_end_callback epoch 9274 lr 7.8125e-06
9507  Epoch 9276/10000
9508    - 0s - loss: 1.6365e-04 - mean_absolute_error: 0.0048 -
        val_loss: 32.1663 - val_mean_absolute_error: 3.6130
9509  epoch_end_callback epoch 9275 lr 7.8125e-06
9510  Epoch 9277/10000
9511    - 0s - loss: 1.4461e-04 - mean_absolute_error: 0.0041 -
        val_loss: 32.1688 - val_mean_absolute_error: 3.6134
9512  epoch_end_callback epoch 9276 lr 7.8125e-06
9513  Epoch 9278/10000
9514    - 0s - loss: 1.6226e-04 - mean_absolute_error: 0.0043 -
        val_loss: 32.1666 - val_mean_absolute_error: 3.6136
9515  epoch_end_callback epoch 9277 lr 7.8125e-06
9516  Epoch 9279/10000
9517    - 0s - loss: 1.4851e-04 - mean_absolute_error: 0.0042 -
        val_loss: 32.1626 - val_mean_absolute_error: 3.6129
9518  epoch_end_callback epoch 9278 lr 7.8125e-06
9519  Epoch 9280/10000
9520    - 0s - loss: 1.5267e-04 - mean_absolute_error: 0.0040 -
        val_loss: 32.1602 - val_mean_absolute_error: 3.6132
9521
9522  Epoch 09280: saving model to ./model/
        model_Epoch9280_val_mean_absolute_error3.613.h5
9523  epoch_end_callback epoch 9279 lr 7.8125e-06
9524  Epoch 9281/10000
9525    - 0s - loss: 1.5914e-04 - mean_absolute_error: 0.0042 -
        val_loss: 32.1675 - val_mean_absolute_error: 3.6133
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9526  epoch_end_callback epoch 9280 lr 7.8125e-06
9527  Epoch 9282/10000
9528   - 0s - loss: 1.5766e-04 - mean_absolute_error: 0.0038 -
      val_loss: 32.1658 - val_mean_absolute_error: 3.6134
9529  epoch_end_callback epoch 9281 lr 7.8125e-06
9530  Epoch 9283/10000
9531   - 0s - loss: 1.5209e-04 - mean_absolute_error: 0.0041 -
      val_loss: 32.1651 - val_mean_absolute_error: 3.6129
9532  epoch_end_callback epoch 9282 lr 7.8125e-06
9533  Epoch 9284/10000
9534   - 0s - loss: 1.5405e-04 - mean_absolute_error: 0.0047 -
      val_loss: 32.1632 - val_mean_absolute_error: 3.6135
9535  epoch_end_callback epoch 9283 lr 7.8125e-06
9536  Epoch 9285/10000
9537   - 0s - loss: 1.5946e-04 - mean_absolute_error: 0.0041 -
      val_loss: 32.1632 - val_mean_absolute_error: 3.6134
9538  epoch_end_callback epoch 9284 lr 7.8125e-06
9539  Epoch 9286/10000
9540   - 0s - loss: 1.4981e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1620 - val_mean_absolute_error: 3.6127
9541  epoch_end_callback epoch 9285 lr 7.8125e-06
9542  Epoch 9287/10000
9543   - 0s - loss: 1.4961e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1649 - val_mean_absolute_error: 3.6131
9544  epoch_end_callback epoch 9286 lr 7.8125e-06
9545  Epoch 9288/10000
9546   - 0s - loss: 1.4936e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1681 - val_mean_absolute_error: 3.6129
9547  epoch_end_callback epoch 9287 lr 7.8125e-06
9548  Epoch 9289/10000
9549   - 0s - loss: 1.5736e-04 - mean_absolute_error: 0.0046 -
      val_loss: 32.1705 - val_mean_absolute_error: 3.6138
9550  epoch_end_callback epoch 9288 lr 7.8125e-06
9551  Epoch 9290/10000
9552   - 0s - loss: 1.2531e-04 - mean_absolute_error: 0.0037 -
      val_loss: 32.1717 - val_mean_absolute_error: 3.6135
9553
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9554  Epoch 09290: saving model to ./model/
      model_Epoch9290_val_mean_absolute_error3.614.h5
9555  epoch_end_callback epoch 9289 lr 7.8125e-06
9556  Epoch 9291/10000
9557   - 0s - loss: 1.5806e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1607 - val_mean_absolute_error: 3.6128
9558  epoch_end_callback epoch 9290 lr 7.8125e-06
9559  Epoch 9292/10000
9560   - 0s - loss: 1.5870e-04 - mean_absolute_error: 0.0041 -
      val_loss: 32.1546 - val_mean_absolute_error: 3.6131
9561  epoch_end_callback epoch 9291 lr 7.8125e-06
9562  Epoch 9293/10000
9563   - 0s - loss: 1.5084e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1779 - val_mean_absolute_error: 3.6137
9564  epoch_end_callback epoch 9292 lr 7.8125e-06
9565  Epoch 9294/10000
9566   - 0s - loss: 1.5481e-04 - mean_absolute_error: 0.0046 -
      val_loss: 32.1730 - val_mean_absolute_error: 3.6136
9567  epoch_end_callback epoch 9293 lr 7.8125e-06
9568  Epoch 9295/10000
9569   - 0s - loss: 1.4158e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1633 - val_mean_absolute_error: 3.6130
9570  epoch_end_callback epoch 9294 lr 7.8125e-06
9571  Epoch 9296/10000
9572   - 0s - loss: 1.5037e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1568 - val_mean_absolute_error: 3.6125
9573  epoch_end_callback epoch 9295 lr 7.8125e-06
9574  Epoch 9297/10000
9575   - 0s - loss: 1.6337e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1658 - val_mean_absolute_error: 3.6134
9576  epoch_end_callback epoch 9296 lr 7.8125e-06
9577  Epoch 9298/10000
9578   - 0s - loss: 1.4783e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1643 - val_mean_absolute_error: 3.6141
9579  epoch_end_callback epoch 9297 lr 7.8125e-06
9580  Epoch 9299/10000
9581   - 0s - loss: 1.5552e-04 - mean_absolute_error: 0.0043 -
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9581  val_loss: 32.1616 - val_mean_absolute_error: 3.6134
9582  epoch_end_callback epoch 9298 lr 7.8125e-06
9583  Epoch 9300/10000
9584   - 0s - loss: 1.4991e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1665 - val_mean_absolute_error: 3.6124
9585
9586  Epoch 09300: saving model to ./model/
      model_Epoch9300_val_mean_absolute_error3.612.h5
9587  epoch_end_callback epoch 9299 lr 7.8125e-06
9588  Epoch 9301/10000
9589   - 0s - loss: 1.4928e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1624 - val_mean_absolute_error: 3.6133
9590  epoch_end_callback epoch 9300 lr 7.8125e-06
9591  Epoch 9302/10000
9592   - 0s - loss: 1.4147e-04 - mean_absolute_error: 0.0041 -
      val_loss: 32.1623 - val_mean_absolute_error: 3.6126
9593  epoch_end_callback epoch 9301 lr 7.8125e-06
9594  Epoch 9303/10000
9595   - 0s - loss: 1.4928e-04 - mean_absolute_error: 0.0041 -
      val_loss: 32.1684 - val_mean_absolute_error: 3.6124
9596  epoch_end_callback epoch 9302 lr 7.8125e-06
9597  Epoch 9304/10000
9598   - 0s - loss: 1.5044e-04 - mean_absolute_error: 0.0040 -
      val_loss: 32.1561 - val_mean_absolute_error: 3.6123
9599  epoch_end_callback epoch 9303 lr 7.8125e-06
9600  Epoch 9305/10000
9601   - 0s - loss: 1.3605e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1541 - val_mean_absolute_error: 3.6127
9602  epoch_end_callback epoch 9304 lr 7.8125e-06
9603  Epoch 9306/10000
9604   - 0s - loss: 1.5446e-04 - mean_absolute_error: 0.0041 -
      val_loss: 32.1539 - val_mean_absolute_error: 3.6127
9605  epoch_end_callback epoch 9305 lr 7.8125e-06
9606  Epoch 9307/10000
9607   - 0s - loss: 1.4776e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1603 - val_mean_absolute_error: 3.6135
9608  epoch_end_callback epoch 9306 lr 7.8125e-06
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9609  Epoch 9308/10000
9610   - 0s - loss: 1.4652e-04 - mean_absolute_error: 0.0045 -
      val_loss: 32.1645 - val_mean_absolute_error: 3.6130
9611  epoch_end_callback epoch 9307 lr 7.8125e-06
9612  Epoch 9309/10000
9613   - 0s - loss: 1.4871e-04 - mean_absolute_error: 0.0040 -
      val_loss: 32.1491 - val_mean_absolute_error: 3.6125
9614  epoch_end_callback epoch 9308 lr 7.8125e-06
9615  Epoch 9310/10000
9616   - 0s - loss: 1.5662e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1600 - val_mean_absolute_error: 3.6123
9617
9618  Epoch 09310: saving model to ./model/
      model_Epoch9310_val_mean_absolute_error3.612.h5
9619  epoch_end_callback epoch 9309 lr 7.8125e-06
9620  Epoch 9311/10000
9621   - 0s - loss: 1.5165e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1607 - val_mean_absolute_error: 3.6123
9622  epoch_end_callback epoch 9310 lr 7.8125e-06
9623  Epoch 9312/10000
9624   - 0s - loss: 1.5149e-04 - mean_absolute_error: 0.0042 -
      val_loss: 32.1581 - val_mean_absolute_error: 3.6128
9625  epoch_end_callback epoch 9311 lr 7.8125e-06
9626  Epoch 9313/10000
9627   - 0s - loss: 1.4608e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1501 - val_mean_absolute_error: 3.6118
9628  epoch_end_callback epoch 9312 lr 7.8125e-06
9629  Epoch 9314/10000
9630   - 0s - loss: 1.4244e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1641 - val_mean_absolute_error: 3.6132
9631  epoch_end_callback epoch 9313 lr 7.8125e-06
9632  Epoch 9315/10000
9633   - 0s - loss: 1.4967e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1622 - val_mean_absolute_error: 3.6139
9634  epoch_end_callback epoch 9314 lr 7.8125e-06
9635  Epoch 9316/10000
9636   - 0s - loss: 1.2940e-04 - mean_absolute_error: 0.0041 -
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9636  val_loss: 32.1619 - val_mean_absolute_error: 3.6127
9637  epoch_end_callback epoch 9315 lr 7.8125e-06
9638  Epoch 9317/10000
9639   - 0s - loss: 1.5522e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1558 - val_mean_absolute_error: 3.6126
9640  epoch_end_callback epoch 9316 lr 7.8125e-06
9641  Epoch 9318/10000
9642   - 0s - loss: 1.5780e-04 - mean_absolute_error: 0.0044 -
      val_loss: 32.1639 - val_mean_absolute_error: 3.6131
9643  epoch_end_callback epoch 9317 lr 7.8125e-06
9644  Epoch 9319/10000
9645   - 0s - loss: 1.4925e-04 - mean_absolute_error: 0.0038 -
      val_loss: 32.1714 - val_mean_absolute_error: 3.6131
9646  epoch_end_callback epoch 9318 lr 7.8125e-06
9647  Epoch 9320/10000
9648   - 0s - loss: 1.4994e-04 - mean_absolute_error: 0.0039 -
      val_loss: 32.1680 - val_mean_absolute_error: 3.6132
9649
9650  Epoch 09320: saving model to ./model/
      model_Epoch9320_val_mean_absolute_error3.613.h5
9651  epoch_end_callback epoch 9319 lr 7.8125e-06
9652  Epoch 9321/10000
9653   - 0s - loss: 1.4668e-04 - mean_absolute_error: 0.0041 -
      val_loss: 32.1539 - val_mean_absolute_error: 3.6131
9654  epoch_end_callback epoch 9320 lr 7.8125e-06
9655  Epoch 9322/10000
9656   - 0s - loss: 1.5577e-04 - mean_absolute_error: 0.0043 -
      val_loss: 32.1572 - val_mean_absolute_error: 3.6130
9657  epoch_end_callback epoch 9321 lr 7.8125e-06
9658  Epoch 9323/10000
9659   - 0s - loss: 1.2496e-04 - mean_absolute_error: 0.0038 -
      val_loss: 32.1568 - val_mean_absolute_error: 3.6125
9660  epoch_end_callback epoch 9322 lr 7.8125e-06
9661  Epoch 9324/10000
9662   - 0s - loss: 1.5460e-04 - mean_absolute_error: 0.0041 -
      val_loss: 32.1716 - val_mean_absolute_error: 3.6136
9663  epoch_end_callback epoch 9323 lr 7.8125e-06
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9664  Epoch 9325/10000
9665   - 0s - loss: 1.4201e-04 - mean_absolute_error: 0.0047 - val_loss: 32.1523 - val_mean_absolute_error: 3.6130
9666  epoch_end_callback epoch 9324 lr 7.8125e-06
9667  Epoch 9326/10000
9668   - 0s - loss: 1.5738e-04 - mean_absolute_error: 0.0048 - val_loss: 32.1747 - val_mean_absolute_error: 3.6127
9669  epoch_end_callback epoch 9325 lr 7.8125e-06
9670  Epoch 9327/10000
9671   - 0s - loss: 1.4406e-04 - mean_absolute_error: 0.0039 - val_loss: 32.1635 - val_mean_absolute_error: 3.6132
9672  epoch_end_callback epoch 9326 lr 7.8125e-06
9673  Epoch 9328/10000
9674   - 0s - loss: 1.5055e-04 - mean_absolute_error: 0.0044 - val_loss: 32.1597 - val_mean_absolute_error: 3.6123
9675  epoch_end_callback epoch 9327 lr 7.8125e-06
9676  Epoch 9329/10000
9677   - 0s - loss: 1.5561e-04 - mean_absolute_error: 0.0042 - val_loss: 32.1434 - val_mean_absolute_error: 3.6123
9678  epoch_end_callback epoch 9328 lr 7.8125e-06
9679  Epoch 9330/10000
9680   - 0s - loss: 1.4575e-04 - mean_absolute_error: 0.0039 - val_loss: 32.1677 - val_mean_absolute_error: 3.6126
9681
9682  Epoch 09330: saving model to ./model/model_Epoch9330_val_mean_absolute_error3.613.h5
9683  epoch_end_callback epoch 9329 lr 7.8125e-06
9684  Epoch 9331/10000
9685   - 0s - loss: 1.4042e-04 - mean_absolute_error: 0.0036 - val_loss: 32.1364 - val_mean_absolute_error: 3.6118
9686  epoch_end_callback epoch 9330 lr 7.8125e-06
9687  Epoch 9332/10000
9688   - 0s - loss: 1.5313e-04 - mean_absolute_error: 0.0042 - val_loss: 32.1552 - val_mean_absolute_error: 3.6129
9689  epoch_end_callback epoch 9331 lr 7.8125e-06
9690  Epoch 9333/10000
9691   - 0s - loss: 1.4657e-04 - mean_absolute_error: 0.0037 -
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9691	val_loss: 32.1652 - val_mean_absolute_error: 3.6127
9692	epoch_end_callback epoch 9332 lr 7.8125e-06
9693	Epoch 9334/10000
9694	- 0s - loss: 1.5235e-04 - mean_absolute_error: 0.0044 - val_loss: 32.1560 - val_mean_absolute_error: 3.6129
9695	epoch_end_callback epoch 9333 lr 7.8125e-06
9696	Epoch 9335/10000
9697	- 0s - loss: 1.5935e-04 - mean_absolute_error: 0.0045 - val_loss: 32.1653 - val_mean_absolute_error: 3.6133
9698	epoch_end_callback epoch 9334 lr 7.8125e-06
9699	Epoch 9336/10000
9700	- 0s - loss: 1.4563e-04 - mean_absolute_error: 0.0044 - val_loss: 32.1632 - val_mean_absolute_error: 3.6129
9701	epoch_end_callback epoch 9335 lr 7.8125e-06
9702	Epoch 9337/10000
9703	- 0s - loss: 1.2777e-04 - mean_absolute_error: 0.0032 - val_loss: 32.1643 - val_mean_absolute_error: 3.6132
9704	epoch_end_callback epoch 9336 lr 3.90625e-06
9705	Epoch 9338/10000
9706	- 0s - loss: 1.2792e-04 - mean_absolute_error: 0.0029 - val_loss: 32.1587 - val_mean_absolute_error: 3.6126
9707	epoch_end_callback epoch 9337 lr 3.90625e-06
9708	Epoch 9339/10000
9709	- 0s - loss: 1.2575e-04 - mean_absolute_error: 0.0030 - val_loss: 32.1710 - val_mean_absolute_error: 3.6129
9710	epoch_end_callback epoch 9338 lr 3.90625e-06
9711	Epoch 9340/10000
9712	- 0s - loss: 1.2698e-04 - mean_absolute_error: 0.0027 - val_loss: 32.1645 - val_mean_absolute_error: 3.6128
9713	
9714	Epoch 09340: saving model to ./model/ model_Epoch9340_val_mean_absolute_error3.613.h5
9715	epoch_end_callback epoch 9339 lr 3.90625e-06
9716	Epoch 9341/10000
9717	- 0s - loss: 1.3345e-04 - mean_absolute_error: 0.0030 - val_loss: 32.1635 - val_mean_absolute_error: 3.6134
9718	epoch_end_callback epoch 9340 lr 3.90625e-06

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9719 Epoch 9342/10000
9720  - 0s - loss: 1.2688e-04 - mean_absolute_error: 0.0028 -
      val_loss: 32.1638 - val_mean_absolute_error: 3.6129
9721 epoch_end_callback epoch 9341 lr 3.90625e-06
9722 Epoch 9343/10000
9723  - 0s - loss: 1.3289e-04 - mean_absolute_error: 0.0030 -
      val_loss: 32.1633 - val_mean_absolute_error: 3.6132
9724 epoch_end_callback epoch 9342 lr 3.90625e-06
9725 Epoch 9344/10000
9726  - 0s - loss: 1.2594e-04 - mean_absolute_error: 0.0028 -
      val_loss: 32.1631 - val_mean_absolute_error: 3.6129
9727 epoch_end_callback epoch 9343 lr 3.90625e-06
9728 Epoch 9345/10000
9729  - 0s - loss: 1.2721e-04 - mean_absolute_error: 0.0028 -
      val_loss: 32.1649 - val_mean_absolute_error: 3.6131
9730 epoch_end_callback epoch 9344 lr 3.90625e-06
9731 Epoch 9346/10000
9732  - 0s - loss: 1.3134e-04 - mean_absolute_error: 0.0027 -
      val_loss: 32.1659 - val_mean_absolute_error: 3.6130
9733 epoch_end_callback epoch 9345 lr 3.90625e-06
9734 Epoch 9347/10000
9735  - 0s - loss: 1.3074e-04 - mean_absolute_error: 0.0028 -
      val_loss: 32.1652 - val_mean_absolute_error: 3.6131
9736 epoch_end_callback epoch 9346 lr 3.90625e-06
9737 Epoch 9348/10000
9738  - 0s - loss: 1.2667e-04 - mean_absolute_error: 0.0028 -
      val_loss: 32.1634 - val_mean_absolute_error: 3.6130
9739 epoch_end_callback epoch 9347 lr 3.90625e-06
9740 Epoch 9349/10000
9741  - 0s - loss: 1.3141e-04 - mean_absolute_error: 0.0029 -
      val_loss: 32.1631 - val_mean_absolute_error: 3.6128
9742 epoch_end_callback epoch 9348 lr 3.90625e-06
9743 Epoch 9350/10000
9744  - 0s - loss: 1.2569e-04 - mean_absolute_error: 0.0027 -
      val_loss: 32.1649 - val_mean_absolute_error: 3.6131
9745
9746 Epoch 09350: saving model to ./model/
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9746  model_Epoch9350_val_mean_absolute_error3.613.h5
9747  epoch_end_callback epoch 9349 lr 3.90625e-06
9748  Epoch 9351/10000
9749   - 0s - loss: 1.3528e-04 - mean_absolute_error: 0.0027 -
      val_loss: 32.1631 - val_mean_absolute_error: 3.6130
9750  epoch_end_callback epoch 9350 lr 3.90625e-06
9751  Epoch 9352/10000
9752   - 0s - loss: 1.2357e-04 - mean_absolute_error: 0.0025 -
      val_loss: 32.1516 - val_mean_absolute_error: 3.6126
9753  epoch_end_callback epoch 9351 lr 3.90625e-06
9754  Epoch 9353/10000
9755   - 0s - loss: 1.2318e-04 - mean_absolute_error: 0.0028 -
      val_loss: 32.1658 - val_mean_absolute_error: 3.6130
9756  epoch_end_callback epoch 9352 lr 3.90625e-06
9757  Epoch 9354/10000
9758   - 0s - loss: 1.2245e-04 - mean_absolute_error: 0.0027 -
      val_loss: 32.1666 - val_mean_absolute_error: 3.6132
9759  epoch_end_callback epoch 9353 lr 3.90625e-06
9760  Epoch 9355/10000
9761   - 0s - loss: 1.2908e-04 - mean_absolute_error: 0.0028 -
      val_loss: 32.1629 - val_mean_absolute_error: 3.6126
9762  epoch_end_callback epoch 9354 lr 3.90625e-06
9763  Epoch 9356/10000
9764   - 0s - loss: 1.3074e-04 - mean_absolute_error: 0.0029 -
      val_loss: 32.1636 - val_mean_absolute_error: 3.6131
9765  epoch_end_callback epoch 9355 lr 3.90625e-06
9766  Epoch 9357/10000
9767   - 0s - loss: 1.2753e-04 - mean_absolute_error: 0.0026 -
      val_loss: 32.1652 - val_mean_absolute_error: 3.6132
9768  epoch_end_callback epoch 9356 lr 3.90625e-06
9769  Epoch 9358/10000
9770   - 0s - loss: 1.3038e-04 - mean_absolute_error: 0.0026 -
      val_loss: 32.1649 - val_mean_absolute_error: 3.6131
9771  epoch_end_callback epoch 9357 lr 3.90625e-06
9772  Epoch 9359/10000
9773   - 0s - loss: 1.2906e-04 - mean_absolute_error: 0.0029 -
      val_loss: 32.1642 - val_mean_absolute_error: 3.6129
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9774 epoch_end_callback epoch 9358 lr 3.90625e-06
9775 Epoch 9360/10000
9776  - 0s - loss: 1.2857e-04 - mean_absolute_error: 0.0027 -
      val_loss: 32.1675 - val_mean_absolute_error: 3.6134
9777
9778 Epoch 09360: saving model to ./model/
      model_Epoch9360_val_mean_absolute_error3.613.h5
9779 epoch_end_callback epoch 9359 lr 3.90625e-06
9780 Epoch 9361/10000
9781  - 0s - loss: 1.2653e-04 - mean_absolute_error: 0.0030 -
      val_loss: 32.1677 - val_mean_absolute_error: 3.6135
9782 epoch_end_callback epoch 9360 lr 3.90625e-06
9783 Epoch 9362/10000
9784  - 0s - loss: 1.3036e-04 - mean_absolute_error: 0.0028 -
      val_loss: 32.1718 - val_mean_absolute_error: 3.6130
9785 epoch_end_callback epoch 9361 lr 3.90625e-06
9786 Epoch 9363/10000
9787  - 0s - loss: 1.2545e-04 - mean_absolute_error: 0.0027 -
      val_loss: 32.1683 - val_mean_absolute_error: 3.6130
9788 epoch_end_callback epoch 9362 lr 3.90625e-06
9789 Epoch 9364/10000
9790  - 0s - loss: 1.2815e-04 - mean_absolute_error: 0.0025 -
      val_loss: 32.1666 - val_mean_absolute_error: 3.6131
9791 epoch_end_callback epoch 9363 lr 3.90625e-06
9792 Epoch 9365/10000
9793  - 0s - loss: 1.2620e-04 - mean_absolute_error: 0.0030 -
      val_loss: 32.1700 - val_mean_absolute_error: 3.6134
9794 epoch_end_callback epoch 9364 lr 3.90625e-06
9795 Epoch 9366/10000
9796  - 0s - loss: 1.2914e-04 - mean_absolute_error: 0.0028 -
      val_loss: 32.1701 - val_mean_absolute_error: 3.6131
9797 epoch_end_callback epoch 9365 lr 3.90625e-06
9798 Epoch 9367/10000
9799  - 0s - loss: 1.3011e-04 - mean_absolute_error: 0.0028 -
      val_loss: 32.1666 - val_mean_absolute_error: 3.6133
9800 epoch_end_callback epoch 9366 lr 3.90625e-06
9801 Epoch 9368/10000
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9802    - 0s - loss: 1.2868e-04 - mean_absolute_error: 0.0029 -
        val_loss: 32.1678 - val_mean_absolute_error: 3.6133
9803  epoch_end_callback epoch 9367 lr 3.90625e-06
9804  Epoch 9369/10000
9805    - 0s - loss: 1.3009e-04 - mean_absolute_error: 0.0030 -
        val_loss: 32.1684 - val_mean_absolute_error: 3.6134
9806  epoch_end_callback epoch 9368 lr 3.90625e-06
9807  Epoch 9370/10000
9808    - 0s - loss: 1.2962e-04 - mean_absolute_error: 0.0027 -
        val_loss: 32.1713 - val_mean_absolute_error: 3.6132
9809
9810  Epoch 09370: saving model to ./model/
        model_Epoch9370_val_mean_absolute_error3.613.h5
9811  epoch_end_callback epoch 9369 lr 3.90625e-06
9812  Epoch 9371/10000
9813    - 0s - loss: 1.2628e-04 - mean_absolute_error: 0.0028 -
        val_loss: 32.1576 - val_mean_absolute_error: 3.6131
9814  epoch_end_callback epoch 9370 lr 3.90625e-06
9815  Epoch 9372/10000
9816    - 0s - loss: 1.2723e-04 - mean_absolute_error: 0.0029 -
        val_loss: 32.1675 - val_mean_absolute_error: 3.6133
9817  epoch_end_callback epoch 9371 lr 3.90625e-06
9818  Epoch 9373/10000
9819    - 0s - loss: 1.2741e-04 - mean_absolute_error: 0.0026 -
        val_loss: 32.1715 - val_mean_absolute_error: 3.6132
9820  epoch_end_callback epoch 9372 lr 3.90625e-06
9821  Epoch 9374/10000
9822    - 0s - loss: 1.3000e-04 - mean_absolute_error: 0.0029 -
        val_loss: 32.1735 - val_mean_absolute_error: 3.6138
9823  epoch_end_callback epoch 9373 lr 3.90625e-06
9824  Epoch 9375/10000
9825    - 0s - loss: 1.3077e-04 - mean_absolute_error: 0.0029 -
        val_loss: 32.1660 - val_mean_absolute_error: 3.6131
9826  epoch_end_callback epoch 9374 lr 3.90625e-06
9827  Epoch 9376/10000
9828    - 0s - loss: 1.2687e-04 - mean_absolute_error: 0.0027 -
        val_loss: 32.1676 - val_mean_absolute_error: 3.6129
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9829  epoch_end_callback epoch 9375 lr 3.90625e-06
9830  Epoch 9377/10000
9831   - 0s - loss: 1.3171e-04 - mean_absolute_error: 0.0028 - val_loss: 32.1667 - val_mean_absolute_error: 3.6133
9832  epoch_end_callback epoch 9376 lr 3.90625e-06
9833  Epoch 9378/10000
9834   - 0s - loss: 1.2507e-04 - mean_absolute_error: 0.0027 - val_loss: 32.1644 - val_mean_absolute_error: 3.6131
9835  epoch_end_callback epoch 9377 lr 3.90625e-06
9836  Epoch 9379/10000
9837   - 0s - loss: 1.2861e-04 - mean_absolute_error: 0.0028 - val_loss: 32.1634 - val_mean_absolute_error: 3.6128
9838  epoch_end_callback epoch 9378 lr 3.90625e-06
9839  Epoch 9380/10000
9840   - 0s - loss: 1.2600e-04 - mean_absolute_error: 0.0027 - val_loss: 32.1646 - val_mean_absolute_error: 3.6130
9841
9842  Epoch 09380: saving model to ./model/model_Epoch9380_val_mean_absolute_error3.613.h5
9843  epoch_end_callback epoch 9379 lr 3.90625e-06
9844  Epoch 9381/10000
9845   - 0s - loss: 1.2926e-04 - mean_absolute_error: 0.0028 - val_loss: 32.1654 - val_mean_absolute_error: 3.6131
9846  epoch_end_callback epoch 9380 lr 3.90625e-06
9847  Epoch 9382/10000
9848   - 0s - loss: 1.2614e-04 - mean_absolute_error: 0.0027 - val_loss: 32.1650 - val_mean_absolute_error: 3.6135
9849  epoch_end_callback epoch 9381 lr 3.90625e-06
9850  Epoch 9383/10000
9851   - 0s - loss: 1.2948e-04 - mean_absolute_error: 0.0029 - val_loss: 32.1637 - val_mean_absolute_error: 3.6131
9852  epoch_end_callback epoch 9382 lr 3.90625e-06
9853  Epoch 9384/10000
9854   - 0s - loss: 1.2578e-04 - mean_absolute_error: 0.0027 - val_loss: 32.1725 - val_mean_absolute_error: 3.6131
9855  epoch_end_callback epoch 9383 lr 3.90625e-06
9856  Epoch 9385/10000
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9857   - 0s - loss: 1.2955e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1638 - val_mean_absolute_error: 3.6132
9858  epoch_end_callback epoch 9384 lr 3.90625e-06
9859  Epoch 9386/10000
9860   - 0s - loss: 1.2631e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1671 - val_mean_absolute_error: 3.6134
9861  epoch_end_callback epoch 9385 lr 3.90625e-06
9862  Epoch 9387/10000
9863   - 0s - loss: 1.2901e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1661 - val_mean_absolute_error: 3.6132
9864  epoch_end_callback epoch 9386 lr 3.90625e-06
9865  Epoch 9388/10000
9866   - 0s - loss: 1.2481e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1694 - val_mean_absolute_error: 3.6136
9867  epoch_end_callback epoch 9387 lr 3.90625e-06
9868  Epoch 9389/10000
9869   - 0s - loss: 1.2631e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1631 - val_mean_absolute_error: 3.6132
9870  epoch_end_callback epoch 9388 lr 3.90625e-06
9871  Epoch 9390/10000
9872   - 0s - loss: 1.3327e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1694 - val_mean_absolute_error: 3.6131
9873
9874  Epoch 09390: saving model to ./model/
       model_Epoch9390_val_mean_absolute_error3.613.h5
9875  epoch_end_callback epoch 9389 lr 3.90625e-06
9876  Epoch 9391/10000
9877   - 0s - loss: 1.2739e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1612 - val_mean_absolute_error: 3.6132
9878  epoch_end_callback epoch 9390 lr 3.90625e-06
9879  Epoch 9392/10000
9880   - 0s - loss: 1.2794e-04 - mean_absolute_error: 0.0030 -
       val_loss: 32.1697 - val_mean_absolute_error: 3.6134
9881  epoch_end_callback epoch 9391 lr 3.90625e-06
9882  Epoch 9393/10000
9883   - 0s - loss: 1.2485e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1626 - val_mean_absolute_error: 3.6132
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9884  epoch_end_callback epoch 9392 lr 3.90625e-06
9885  Epoch 9394/10000
9886   - 0s - loss: 1.2629e-04 - mean_absolute_error: 0.0030 -
      val_loss: 32.1674 - val_mean_absolute_error: 3.6133
9887  epoch_end_callback epoch 9393 lr 3.90625e-06
9888  Epoch 9395/10000
9889   - 0s - loss: 1.2655e-04 - mean_absolute_error: 0.0028 -
      val_loss: 32.1678 - val_mean_absolute_error: 3.6131
9890  epoch_end_callback epoch 9394 lr 3.90625e-06
9891  Epoch 9396/10000
9892   - 0s - loss: 1.2851e-04 - mean_absolute_error: 0.0029 -
      val_loss: 32.1661 - val_mean_absolute_error: 3.6133
9893  epoch_end_callback epoch 9395 lr 3.90625e-06
9894  Epoch 9397/10000
9895   - 0s - loss: 1.2802e-04 - mean_absolute_error: 0.0026 -
      val_loss: 32.1622 - val_mean_absolute_error: 3.6128
9896  epoch_end_callback epoch 9396 lr 3.90625e-06
9897  Epoch 9398/10000
9898   - 0s - loss: 1.3382e-04 - mean_absolute_error: 0.0028 -
      val_loss: 32.1656 - val_mean_absolute_error: 3.6129
9899  epoch_end_callback epoch 9397 lr 3.90625e-06
9900  Epoch 9399/10000
9901   - 0s - loss: 1.2714e-04 - mean_absolute_error: 0.0025 -
      val_loss: 32.1676 - val_mean_absolute_error: 3.6133
9902  epoch_end_callback epoch 9398 lr 3.90625e-06
9903  Epoch 9400/10000
9904   - 0s - loss: 1.2773e-04 - mean_absolute_error: 0.0030 -
      val_loss: 32.1629 - val_mean_absolute_error: 3.6129
9905
9906  Epoch 09400: saving model to ./model/
      model_Epoch9400_val_mean_absolute_error3.613.h5
9907  epoch_end_callback epoch 9399 lr 3.90625e-06
9908  Epoch 9401/10000
9909   - 0s - loss: 1.2551e-04 - mean_absolute_error: 0.0025 -
      val_loss: 32.1645 - val_mean_absolute_error: 3.6131
9910  epoch_end_callback epoch 9400 lr 3.90625e-06
9911  Epoch 9402/10000
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9912   - 0s - loss: 1.2923e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1600 - val_mean_absolute_error: 3.6129
9913 epoch_end_callback epoch 9401 lr 3.90625e-06
9914 Epoch 9403/10000
9915   - 0s - loss: 1.2754e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1685 - val_mean_absolute_error: 3.6133
9916 epoch_end_callback epoch 9402 lr 3.90625e-06
9917 Epoch 9404/10000
9918   - 0s - loss: 1.2341e-04 - mean_absolute_error: 0.0029 -
       val_loss: 32.1667 - val_mean_absolute_error: 3.6133
9919 epoch_end_callback epoch 9403 lr 3.90625e-06
9920 Epoch 9405/10000
9921   - 0s - loss: 1.2750e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1645 - val_mean_absolute_error: 3.6132
9922 epoch_end_callback epoch 9404 lr 3.90625e-06
9923 Epoch 9406/10000
9924   - 0s - loss: 1.3016e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1683 - val_mean_absolute_error: 3.6134
9925 epoch_end_callback epoch 9405 lr 3.90625e-06
9926 Epoch 9407/10000
9927   - 0s - loss: 1.2869e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1659 - val_mean_absolute_error: 3.6131
9928 epoch_end_callback epoch 9406 lr 3.90625e-06
9929 Epoch 9408/10000
9930   - 0s - loss: 1.2601e-04 - mean_absolute_error: 0.0030 -
       val_loss: 32.1662 - val_mean_absolute_error: 3.6132
9931 epoch_end_callback epoch 9407 lr 3.90625e-06
9932 Epoch 9409/10000
9933   - 0s - loss: 1.2676e-04 - mean_absolute_error: 0.0025 -
       val_loss: 32.1623 - val_mean_absolute_error: 3.6131
9934 epoch_end_callback epoch 9408 lr 3.90625e-06
9935 Epoch 9410/10000
9936   - 0s - loss: 1.2487e-04 - mean_absolute_error: 0.0029 -
       val_loss: 32.1668 - val_mean_absolute_error: 3.6133
9937
9938 Epoch 09410: saving model to ./model/
     model_Epoch9410_val_mean_absolute_error3.613.h5
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9939  epoch_end_callback epoch 9409 lr 3.90625e-06
9940  Epoch 9411/10000
9941   - 0s - loss: 1.2472e-04 - mean_absolute_error: 0.0027 - val_loss: 32.1621 - val_mean_absolute_error: 3.6129
9942  epoch_end_callback epoch 9410 lr 3.90625e-06
9943  Epoch 9412/10000
9944   - 0s - loss: 1.3134e-04 - mean_absolute_error: 0.0029 - val_loss: 32.1727 - val_mean_absolute_error: 3.6134
9945  epoch_end_callback epoch 9411 lr 3.90625e-06
9946  Epoch 9413/10000
9947   - 0s - loss: 1.3120e-04 - mean_absolute_error: 0.0026 - val_loss: 32.1652 - val_mean_absolute_error: 3.6133
9948  epoch_end_callback epoch 9412 lr 3.90625e-06
9949  Epoch 9414/10000
9950   - 0s - loss: 1.1444e-04 - mean_absolute_error: 0.0023 - val_loss: 32.1690 - val_mean_absolute_error: 3.6134
9951  epoch_end_callback epoch 9413 lr 3.90625e-06
9952  Epoch 9415/10000
9953   - 0s - loss: 1.2926e-04 - mean_absolute_error: 0.0027 - val_loss: 32.1774 - val_mean_absolute_error: 3.6136
9954  epoch_end_callback epoch 9414 lr 3.90625e-06
9955  Epoch 9416/10000
9956   - 0s - loss: 1.3078e-04 - mean_absolute_error: 0.0029 - val_loss: 32.1685 - val_mean_absolute_error: 3.6129
9957  epoch_end_callback epoch 9415 lr 3.90625e-06
9958  Epoch 9417/10000
9959   - 0s - loss: 1.2673e-04 - mean_absolute_error: 0.0028 - val_loss: 32.1722 - val_mean_absolute_error: 3.6138
9960  epoch_end_callback epoch 9416 lr 3.90625e-06
9961  Epoch 9418/10000
9962   - 0s - loss: 1.2640e-04 - mean_absolute_error: 0.0029 - val_loss: 32.1691 - val_mean_absolute_error: 3.6130
9963  epoch_end_callback epoch 9417 lr 3.90625e-06
9964  Epoch 9419/10000
9965   - 0s - loss: 1.2501e-04 - mean_absolute_error: 0.0027 - val_loss: 32.1729 - val_mean_absolute_error: 3.6136
9966  epoch_end_callback epoch 9418 lr 3.90625e-06
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9967  Epoch 9420/10000
9968   - 0s - loss: 1.3008e-04 - mean_absolute_error: 0.0029 -
       val_loss: 32.1655 - val_mean_absolute_error: 3.6129
9969
9970  Epoch 09420: saving model to ./model/
       model_Epoch9420_val_mean_absolute_error3.613.h5
9971  epoch_end_callback epoch 9419 lr 3.90625e-06
9972  Epoch 9421/10000
9973   - 0s - loss: 1.2898e-04 - mean_absolute_error: 0.0029 -
       val_loss: 32.1710 - val_mean_absolute_error: 3.6132
9974  epoch_end_callback epoch 9420 lr 3.90625e-06
9975  Epoch 9422/10000
9976   - 0s - loss: 1.2737e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1649 - val_mean_absolute_error: 3.6130
9977  epoch_end_callback epoch 9421 lr 3.90625e-06
9978  Epoch 9423/10000
9979   - 0s - loss: 1.2579e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1663 - val_mean_absolute_error: 3.6134
9980  epoch_end_callback epoch 9422 lr 3.90625e-06
9981  Epoch 9424/10000
9982   - 0s - loss: 1.2813e-04 - mean_absolute_error: 0.0031 -
       val_loss: 32.1634 - val_mean_absolute_error: 3.6131
9983  epoch_end_callback epoch 9423 lr 3.90625e-06
9984  Epoch 9425/10000
9985   - 0s - loss: 1.2559e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1702 - val_mean_absolute_error: 3.6133
9986  epoch_end_callback epoch 9424 lr 3.90625e-06
9987  Epoch 9426/10000
9988   - 0s - loss: 1.3055e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1668 - val_mean_absolute_error: 3.6133
9989  epoch_end_callback epoch 9425 lr 3.90625e-06
9990  Epoch 9427/10000
9991   - 0s - loss: 1.2330e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1667 - val_mean_absolute_error: 3.6131
9992  epoch_end_callback epoch 9426 lr 3.90625e-06
9993  Epoch 9428/10000
9994   - 0s - loss: 1.2783e-04 - mean_absolute_error: 0.0027 -
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9994   val_loss: 32.1643 - val_mean_absolute_error: 3.6132
9995   epoch_end_callback epoch 9427 lr 3.90625e-06
9996   Epoch 9429/10000
9997    - 0s - loss: 1.3071e-04 - mean_absolute_error: 0.0030 -
       val_loss: 32.1585 - val_mean_absolute_error: 3.6128
9998   epoch_end_callback epoch 9428 lr 3.90625e-06
9999   Epoch 9430/10000
10000   - 0s - loss: 1.2785e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1671 - val_mean_absolute_error: 3.6131
10001
10002  Epoch 09430: saving model to ./model/
       model_Epoch9430_val_mean_absolute_error3.613.h5
10003  epoch_end_callback epoch 9429 lr 3.90625e-06
10004  Epoch 9431/10000
10005   - 0s - loss: 1.2892e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1706 - val_mean_absolute_error: 3.6133
10006  epoch_end_callback epoch 9430 lr 3.90625e-06
10007  Epoch 9432/10000
10008   - 0s - loss: 1.2802e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1687 - val_mean_absolute_error: 3.6134
10009  epoch_end_callback epoch 9431 lr 3.90625e-06
10010  Epoch 9433/10000
10011   - 0s - loss: 1.2242e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1672 - val_mean_absolute_error: 3.6129
10012  epoch_end_callback epoch 9432 lr 3.90625e-06
10013  Epoch 9434/10000
10014   - 0s - loss: 1.2701e-04 - mean_absolute_error: 0.0029 -
       val_loss: 32.1706 - val_mean_absolute_error: 3.6131
10015  epoch_end_callback epoch 9433 lr 3.90625e-06
10016  Epoch 9435/10000
10017   - 0s - loss: 1.2585e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1672 - val_mean_absolute_error: 3.6133
10018  epoch_end_callback epoch 9434 lr 3.90625e-06
10019  Epoch 9436/10000
10020   - 0s - loss: 1.2929e-04 - mean_absolute_error: 0.0029 -
       val_loss: 32.1701 - val_mean_absolute_error: 3.6132
10021  epoch_end_callback epoch 9435 lr 3.90625e-06
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10022  Epoch 9437/10000
10023   - 0s - loss: 1.2822e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1660 - val_mean_absolute_error: 3.6132
10024  epoch_end_callback epoch 9436 lr 3.90625e-06
10025  Epoch 9438/10000
10026   - 0s - loss: 1.2622e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1685 - val_mean_absolute_error: 3.6139
10027  epoch_end_callback epoch 9437 lr 3.90625e-06
10028  Epoch 9439/10000
10029   - 0s - loss: 1.2739e-04 - mean_absolute_error: 0.0030 -
       val_loss: 32.1660 - val_mean_absolute_error: 3.6133
10030  epoch_end_callback epoch 9438 lr 3.90625e-06
10031  Epoch 9440/10000
10032   - 0s - loss: 1.2413e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1697 - val_mean_absolute_error: 3.6136
10033
10034  Epoch 09440: saving model to ./model/
       model_Epoch9440_val_mean_absolute_error3.614.h5
10035  epoch_end_callback epoch 9439 lr 3.90625e-06
10036  Epoch 9441/10000
10037   - 0s - loss: 1.2563e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1675 - val_mean_absolute_error: 3.6131
10038  epoch_end_callback epoch 9440 lr 3.90625e-06
10039  Epoch 9442/10000
10040   - 0s - loss: 1.3181e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1630 - val_mean_absolute_error: 3.6132
10041  epoch_end_callback epoch 9441 lr 3.90625e-06
10042  Epoch 9443/10000
10043   - 0s - loss: 1.3040e-04 - mean_absolute_error: 0.0029 -
       val_loss: 32.1654 - val_mean_absolute_error: 3.6130
10044  epoch_end_callback epoch 9442 lr 3.90625e-06
10045  Epoch 9444/10000
10046   - 0s - loss: 1.2573e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1686 - val_mean_absolute_error: 3.6134
10047  epoch_end_callback epoch 9443 lr 3.90625e-06
10048  Epoch 9445/10000
10049   - 0s - loss: 1.2678e-04 - mean_absolute_error: 0.0026 -
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10049  val_loss: 32.1645 - val_mean_absolute_error: 3.6133
10050  epoch_end_callback epoch 9444 lr 3.90625e-06
10051  Epoch 9446/10000
10052   - 0s - loss: 1.2162e-04 - mean_absolute_error: 0.0030 -
       val_loss: 32.1678 - val_mean_absolute_error: 3.6135
10053  epoch_end_callback epoch 9445 lr 3.90625e-06
10054  Epoch 9447/10000
10055   - 0s - loss: 1.2550e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1690 - val_mean_absolute_error: 3.6134
10056  epoch_end_callback epoch 9446 lr 3.90625e-06
10057  Epoch 9448/10000
10058   - 0s - loss: 1.2568e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1654 - val_mean_absolute_error: 3.6132
10059  epoch_end_callback epoch 9447 lr 3.90625e-06
10060  Epoch 9449/10000
10061   - 0s - loss: 1.2754e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1667 - val_mean_absolute_error: 3.6130
10062  epoch_end_callback epoch 9448 lr 3.90625e-06
10063  Epoch 9450/10000
10064   - 0s - loss: 1.2657e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1626 - val_mean_absolute_error: 3.6131
10065
10066  Epoch 09450: saving model to ./model/
       model_Epoch9450_val_mean_absolute_error3.613.h5
10067  epoch_end_callback epoch 9449 lr 3.90625e-06
10068  Epoch 9451/10000
10069   - 0s - loss: 1.3185e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1648 - val_mean_absolute_error: 3.6129
10070  epoch_end_callback epoch 9450 lr 3.90625e-06
10071  Epoch 9452/10000
10072   - 0s - loss: 1.2570e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1657 - val_mean_absolute_error: 3.6132
10073  epoch_end_callback epoch 9451 lr 3.90625e-06
10074  Epoch 9453/10000
10075   - 0s - loss: 1.2471e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1510 - val_mean_absolute_error: 3.6127
10076  epoch_end_callback epoch 9452 lr 3.90625e-06
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10077  Epoch 9454/10000
10078   - 0s - loss: 1.2473e-04 - mean_absolute_error: 0.0029 -
        val_loss: 32.1688 - val_mean_absolute_error: 3.6131
10079  epoch_end_callback epoch 9453 lr 3.90625e-06
10080  Epoch 9455/10000
10081   - 0s - loss: 1.2137e-04 - mean_absolute_error: 0.0024 -
        val_loss: 32.1633 - val_mean_absolute_error: 3.6132
10082  epoch_end_callback epoch 9454 lr 3.90625e-06
10083  Epoch 9456/10000
10084   - 0s - loss: 1.2627e-04 - mean_absolute_error: 0.0028 -
        val_loss: 32.1667 - val_mean_absolute_error: 3.6132
10085  epoch_end_callback epoch 9455 lr 3.90625e-06
10086  Epoch 9457/10000
10087   - 0s - loss: 1.1428e-04 - mean_absolute_error: 0.0025 -
        val_loss: 32.1701 - val_mean_absolute_error: 3.6131
10088  epoch_end_callback epoch 9456 lr 3.90625e-06
10089  Epoch 9458/10000
10090   - 0s - loss: 1.2735e-04 - mean_absolute_error: 0.0032 -
        val_loss: 32.1668 - val_mean_absolute_error: 3.6131
10091  epoch_end_callback epoch 9457 lr 3.90625e-06
10092  Epoch 9459/10000
10093   - 0s - loss: 1.2111e-04 - mean_absolute_error: 0.0028 -
        val_loss: 32.1667 - val_mean_absolute_error: 3.6132
10094  epoch_end_callback epoch 9458 lr 3.90625e-06
10095  Epoch 9460/10000
10096   - 0s - loss: 1.2349e-04 - mean_absolute_error: 0.0027 -
        val_loss: 32.1719 - val_mean_absolute_error: 3.6133
10097
10098  Epoch 09460: saving model to ./model/
        model_Epoch9460_val_mean_absolute_error3.613.h5
10099  epoch_end_callback epoch 9459 lr 3.90625e-06
10100  Epoch 9461/10000
10101   - 0s - loss: 1.2601e-04 - mean_absolute_error: 0.0028 -
        val_loss: 32.1729 - val_mean_absolute_error: 3.6136
10102  epoch_end_callback epoch 9460 lr 3.90625e-06
10103  Epoch 9462/10000
10104   - 0s - loss: 1.1571e-04 - mean_absolute_error: 0.0026 -
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10104  val_loss: 32.1696 - val_mean_absolute_error: 3.6133
10105  epoch_end_callback epoch 9461 lr 3.90625e-06
10106  Epoch 9463/10000
10107   - 0s - loss: 1.2924e-04 - mean_absolute_error: 0.0029 -
       val_loss: 32.1519 - val_mean_absolute_error: 3.6126
10108  epoch_end_callback epoch 9462 lr 3.90625e-06
10109  Epoch 9464/10000
10110   - 0s - loss: 1.2118e-04 - mean_absolute_error: 0.0029 -
       val_loss: 32.1661 - val_mean_absolute_error: 3.6131
10111  epoch_end_callback epoch 9463 lr 3.90625e-06
10112  Epoch 9465/10000
10113   - 0s - loss: 1.2210e-04 - mean_absolute_error: 0.0024 -
       val_loss: 32.1662 - val_mean_absolute_error: 3.6132
10114  epoch_end_callback epoch 9464 lr 3.90625e-06
10115  Epoch 9466/10000
10116   - 0s - loss: 1.1964e-04 - mean_absolute_error: 0.0025 -
       val_loss: 32.1603 - val_mean_absolute_error: 3.6130
10117  epoch_end_callback epoch 9465 lr 3.90625e-06
10118  Epoch 9467/10000
10119   - 0s - loss: 1.1965e-04 - mean_absolute_error: 0.0029 -
       val_loss: 32.1700 - val_mean_absolute_error: 3.6134
10120  epoch_end_callback epoch 9466 lr 3.90625e-06
10121  Epoch 9468/10000
10122   - 0s - loss: 1.2798e-04 - mean_absolute_error: 0.0029 -
       val_loss: 32.1661 - val_mean_absolute_error: 3.6136
10123  epoch_end_callback epoch 9467 lr 3.90625e-06
10124  Epoch 9469/10000
10125   - 0s - loss: 1.2302e-04 - mean_absolute_error: 0.0029 -
       val_loss: 32.1683 - val_mean_absolute_error: 3.6134
10126  epoch_end_callback epoch 9468 lr 3.90625e-06
10127  Epoch 9470/10000
10128   - 0s - loss: 1.2351e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1624 - val_mean_absolute_error: 3.6133
10129
10130  Epoch 09470: saving model to ./model/
       model_Epoch9470_val_mean_absolute_error3.613.h5
10131  epoch_end_callback epoch 9469 lr 3.90625e-06
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10132  Epoch 9471/10000
10133   - 0s - loss: 1.2273e-04 - mean_absolute_error: 0.0028 -
        val_loss: 32.1638 - val_mean_absolute_error: 3.6132
10134  epoch_end_callback epoch 9470 lr 3.90625e-06
10135  Epoch 9472/10000
10136   - 0s - loss: 1.2922e-04 - mean_absolute_error: 0.0028 -
        val_loss: 32.1605 - val_mean_absolute_error: 3.6129
10137  epoch_end_callback epoch 9471 lr 3.90625e-06
10138  Epoch 9473/10000
10139   - 0s - loss: 1.1909e-04 - mean_absolute_error: 0.0031 -
        val_loss: 32.1743 - val_mean_absolute_error: 3.6133
10140  epoch_end_callback epoch 9472 lr 3.90625e-06
10141  Epoch 9474/10000
10142   - 0s - loss: 1.2524e-04 - mean_absolute_error: 0.0027 -
        val_loss: 32.1707 - val_mean_absolute_error: 3.6135
10143  epoch_end_callback epoch 9473 lr 3.90625e-06
10144  Epoch 9475/10000
10145   - 0s - loss: 1.2615e-04 - mean_absolute_error: 0.0026 -
        val_loss: 32.1707 - val_mean_absolute_error: 3.6132
10146  epoch_end_callback epoch 9474 lr 3.90625e-06
10147  Epoch 9476/10000
10148   - 0s - loss: 1.3016e-04 - mean_absolute_error: 0.0030 -
        val_loss: 32.1655 - val_mean_absolute_error: 3.6131
10149  epoch_end_callback epoch 9475 lr 3.90625e-06
10150  Epoch 9477/10000
10151   - 0s - loss: 1.2510e-04 - mean_absolute_error: 0.0026 -
        val_loss: 32.1718 - val_mean_absolute_error: 3.6135
10152  epoch_end_callback epoch 9476 lr 3.90625e-06
10153  Epoch 9478/10000
10154   - 0s - loss: 1.2490e-04 - mean_absolute_error: 0.0030 -
        val_loss: 32.1659 - val_mean_absolute_error: 3.6134
10155  epoch_end_callback epoch 9477 lr 3.90625e-06
10156  Epoch 9479/10000
10157   - 0s - loss: 1.2422e-04 - mean_absolute_error: 0.0027 -
        val_loss: 32.1683 - val_mean_absolute_error: 3.6134
10158  epoch_end_callback epoch 9478 lr 3.90625e-06
10159  Epoch 9480/10000
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10160    - 0s - loss: 1.3147e-04 - mean_absolute_error: 0.0026 -
         val_loss: 32.1641 - val_mean_absolute_error: 3.6129
10161
10162   Epoch 09480: saving model to ./model/
        model_Epoch9480_val_mean_absolute_error3.613.h5
10163   epoch_end_callback epoch 9479 lr 3.90625e-06
10164   Epoch 9481/10000
10165    - 0s - loss: 1.2291e-04 - mean_absolute_error: 0.0026 -
         val_loss: 32.1694 - val_mean_absolute_error: 3.6134
10166   epoch_end_callback epoch 9480 lr 3.90625e-06
10167   Epoch 9482/10000
10168    - 0s - loss: 1.1383e-04 - mean_absolute_error: 0.0024 -
         val_loss: 32.1687 - val_mean_absolute_error: 3.6135
10169   epoch_end_callback epoch 9481 lr 3.90625e-06
10170   Epoch 9483/10000
10171    - 0s - loss: 1.3001e-04 - mean_absolute_error: 0.0028 -
         val_loss: 32.1722 - val_mean_absolute_error: 3.6137
10172   epoch_end_callback epoch 9482 lr 3.90625e-06
10173   Epoch 9484/10000
10174    - 0s - loss: 1.2533e-04 - mean_absolute_error: 0.0028 -
         val_loss: 32.1707 - val_mean_absolute_error: 3.6133
10175   epoch_end_callback epoch 9483 lr 3.90625e-06
10176   Epoch 9485/10000
10177    - 0s - loss: 1.2742e-04 - mean_absolute_error: 0.0027 -
         val_loss: 32.1685 - val_mean_absolute_error: 3.6135
10178   epoch_end_callback epoch 9484 lr 3.90625e-06
10179   Epoch 9486/10000
10180    - 0s - loss: 1.2700e-04 - mean_absolute_error: 0.0027 -
         val_loss: 32.1682 - val_mean_absolute_error: 3.6132
10181   epoch_end_callback epoch 9485 lr 3.90625e-06
10182   Epoch 9487/10000
10183    - 0s - loss: 1.2429e-04 - mean_absolute_error: 0.0025 -
         val_loss: 32.1698 - val_mean_absolute_error: 3.6132
10184   epoch_end_callback epoch 9486 lr 3.90625e-06
10185   Epoch 9488/10000
10186    - 0s - loss: 1.2680e-04 - mean_absolute_error: 0.0029 -
         val_loss: 32.1679 - val_mean_absolute_error: 3.6132
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10187  epoch_end_callback epoch 9487 lr 3.90625e-06
10188  Epoch 9489/10000
10189   - 0s - loss: 1.2796e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1630 - val_mean_absolute_error: 3.6132
10190  epoch_end_callback epoch 9488 lr 3.90625e-06
10191  Epoch 9490/10000
10192   - 0s - loss: 1.2582e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1746 - val_mean_absolute_error: 3.6134
10193
10194  Epoch 09490: saving model to ./model/
       model_Epoch9490_val_mean_absolute_error3.613.h5
10195  epoch_end_callback epoch 9489 lr 3.90625e-06
10196  Epoch 9491/10000
10197   - 0s - loss: 1.2500e-04 - mean_absolute_error: 0.0029 -
       val_loss: 32.1693 - val_mean_absolute_error: 3.6135
10198  epoch_end_callback epoch 9490 lr 3.90625e-06
10199  Epoch 9492/10000
10200   - 0s - loss: 1.2662e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1689 - val_mean_absolute_error: 3.6134
10201  epoch_end_callback epoch 9491 lr 3.90625e-06
10202  Epoch 9493/10000
10203   - 0s - loss: 1.2348e-04 - mean_absolute_error: 0.0025 -
       val_loss: 32.1714 - val_mean_absolute_error: 3.6134
10204  epoch_end_callback epoch 9492 lr 3.90625e-06
10205  Epoch 9494/10000
10206   - 0s - loss: 1.2367e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1758 - val_mean_absolute_error: 3.6134
10207  epoch_end_callback epoch 9493 lr 3.90625e-06
10208  Epoch 9495/10000
10209   - 0s - loss: 1.1296e-04 - mean_absolute_error: 0.0024 -
       val_loss: 32.1673 - val_mean_absolute_error: 3.6132
10210  epoch_end_callback epoch 9494 lr 3.90625e-06
10211  Epoch 9496/10000
10212   - 0s - loss: 1.2575e-04 - mean_absolute_error: 0.0030 -
       val_loss: 32.1700 - val_mean_absolute_error: 3.6135
10213  epoch_end_callback epoch 9495 lr 3.90625e-06
10214  Epoch 9497/10000
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10215     - 0s - loss: 1.2719e-04 - mean_absolute_error: 0.0029 -
          val_loss: 32.1675 - val_mean_absolute_error: 3.6131
10216  epoch_end_callback epoch 9496 lr 3.90625e-06
10217  Epoch 9498/10000
10218     - 0s - loss: 1.2659e-04 - mean_absolute_error: 0.0025 -
          val_loss: 32.1557 - val_mean_absolute_error: 3.6128
10219  epoch_end_callback epoch 9497 lr 3.90625e-06
10220  Epoch 9499/10000
10221     - 0s - loss: 1.1807e-04 - mean_absolute_error: 0.0026 -
          val_loss: 32.1698 - val_mean_absolute_error: 3.6134
10222  epoch_end_callback epoch 9498 lr 3.90625e-06
10223  Epoch 9500/10000
10224     - 0s - loss: 1.1922e-04 - mean_absolute_error: 0.0026 -
          val_loss: 32.1704 - val_mean_absolute_error: 3.6131
10225
10226  Epoch 09500: saving model to ./model/
          model_Epoch9500_val_mean_absolute_error3.613.h5
10227  epoch_end_callback epoch 9499 lr 3.90625e-06
10228  Epoch 9501/10000
10229     - 0s - loss: 1.2384e-04 - mean_absolute_error: 0.0026 -
          val_loss: 32.1722 - val_mean_absolute_error: 3.6136
10230  epoch_end_callback epoch 9500 lr 3.90625e-06
10231  Epoch 9502/10000
10232     - 0s - loss: 1.2491e-04 - mean_absolute_error: 0.0029 -
          val_loss: 32.1659 - val_mean_absolute_error: 3.6132
10233  epoch_end_callback epoch 9501 lr 3.90625e-06
10234  Epoch 9503/10000
10235     - 0s - loss: 1.2522e-04 - mean_absolute_error: 0.0029 -
          val_loss: 32.1691 - val_mean_absolute_error: 3.6134
10236  epoch_end_callback epoch 9502 lr 3.90625e-06
10237  Epoch 9504/10000
10238     - 0s - loss: 1.2662e-04 - mean_absolute_error: 0.0029 -
          val_loss: 32.1789 - val_mean_absolute_error: 3.6138
10239  epoch_end_callback epoch 9503 lr 3.90625e-06
10240  Epoch 9505/10000
10241     - 0s - loss: 1.2513e-04 - mean_absolute_error: 0.0028 -
          val_loss: 32.1686 - val_mean_absolute_error: 3.6132
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10242 epoch_end_callback epoch 9504 lr 3.90625e-06
10243 Epoch 9506/10000
10244  - 0s - loss: 1.2336e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1719 - val_mean_absolute_error: 3.6137
10245 epoch_end_callback epoch 9505 lr 3.90625e-06
10246 Epoch 9507/10000
10247  - 0s - loss: 1.2789e-04 - mean_absolute_error: 0.0029 -
       val_loss: 32.1739 - val_mean_absolute_error: 3.6136
10248 epoch_end_callback epoch 9506 lr 3.90625e-06
10249 Epoch 9508/10000
10250  - 0s - loss: 1.2563e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1698 - val_mean_absolute_error: 3.6131
10251 epoch_end_callback epoch 9507 lr 3.90625e-06
10252 Epoch 9509/10000
10253  - 0s - loss: 1.2458e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1682 - val_mean_absolute_error: 3.6131
10254 epoch_end_callback epoch 9508 lr 3.90625e-06
10255 Epoch 9510/10000
10256  - 0s - loss: 1.3188e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1707 - val_mean_absolute_error: 3.6130
10257
10258 Epoch 09510: saving model to ./model/
       model_Epoch9510_val_mean_absolute_error3.613.h5
10259 epoch_end_callback epoch 9509 lr 3.90625e-06
10260 Epoch 9511/10000
10261  - 0s - loss: 1.2710e-04 - mean_absolute_error: 0.0029 -
       val_loss: 32.1649 - val_mean_absolute_error: 3.6125
10262 epoch_end_callback epoch 9510 lr 3.90625e-06
10263 Epoch 9512/10000
10264  - 0s - loss: 1.2528e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1721 - val_mean_absolute_error: 3.6132
10265 epoch_end_callback epoch 9511 lr 3.90625e-06
10266 Epoch 9513/10000
10267  - 0s - loss: 1.2613e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1665 - val_mean_absolute_error: 3.6130
10268 epoch_end_callback epoch 9512 lr 3.90625e-06
10269 Epoch 9514/10000
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10270    - 0s - loss: 1.2447e-04 - mean_absolute_error: 0.0027 -
         val_loss: 32.1677 - val_mean_absolute_error: 3.6131
10271 epoch_end_callback epoch 9513 lr 3.90625e-06
10272 Epoch 9515/10000
10273    - 0s - loss: 1.2784e-04 - mean_absolute_error: 0.0027 -
         val_loss: 32.1707 - val_mean_absolute_error: 3.6135
10274 epoch_end_callback epoch 9514 lr 3.90625e-06
10275 Epoch 9516/10000
10276    - 0s - loss: 1.2170e-04 - mean_absolute_error: 0.0028 -
         val_loss: 32.1687 - val_mean_absolute_error: 3.6131
10277 epoch_end_callback epoch 9515 lr 3.90625e-06
10278 Epoch 9517/10000
10279    - 0s - loss: 1.2782e-04 - mean_absolute_error: 0.0027 -
         val_loss: 32.1816 - val_mean_absolute_error: 3.6141
10280 epoch_end_callback epoch 9516 lr 3.90625e-06
10281 Epoch 9518/10000
10282    - 0s - loss: 1.2516e-04 - mean_absolute_error: 0.0030 -
         val_loss: 32.1692 - val_mean_absolute_error: 3.6134
10283 epoch_end_callback epoch 9517 lr 3.90625e-06
10284 Epoch 9519/10000
10285    - 0s - loss: 1.2336e-04 - mean_absolute_error: 0.0026 -
         val_loss: 32.1591 - val_mean_absolute_error: 3.6135
10286 epoch_end_callback epoch 9518 lr 3.90625e-06
10287 Epoch 9520/10000
10288    - 0s - loss: 1.2757e-04 - mean_absolute_error: 0.0028 -
         val_loss: 32.1725 - val_mean_absolute_error: 3.6134
10289
10290 Epoch 09520: saving model to ./model/
         model_Epoch9520_val_mean_absolute_error3.613.h5
10291 epoch_end_callback epoch 9519 lr 3.90625e-06
10292 Epoch 9521/10000
10293    - 0s - loss: 1.2321e-04 - mean_absolute_error: 0.0026 -
         val_loss: 32.1705 - val_mean_absolute_error: 3.6136
10294 epoch_end_callback epoch 9520 lr 3.90625e-06
10295 Epoch 9522/10000
10296    - 0s - loss: 1.2242e-04 - mean_absolute_error: 0.0027 -
         val_loss: 32.1664 - val_mean_absolute_error: 3.6135
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10297  epoch_end_callback epoch 9521 lr 3.90625e-06
10298  Epoch 9523/10000
10299   - 0s - loss: 1.2442e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1717 - val_mean_absolute_error: 3.6135
10300  epoch_end_callback epoch 9522 lr 3.90625e-06
10301  Epoch 9524/10000
10302   - 0s - loss: 1.2776e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1821 - val_mean_absolute_error: 3.6139
10303  epoch_end_callback epoch 9523 lr 3.90625e-06
10304  Epoch 9525/10000
10305   - 0s - loss: 1.2759e-04 - mean_absolute_error: 0.0030 -
       val_loss: 32.1757 - val_mean_absolute_error: 3.6138
10306  epoch_end_callback epoch 9524 lr 3.90625e-06
10307  Epoch 9526/10000
10308   - 0s - loss: 1.2245e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1686 - val_mean_absolute_error: 3.6134
10309  epoch_end_callback epoch 9525 lr 3.90625e-06
10310  Epoch 9527/10000
10311   - 0s - loss: 1.2507e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1654 - val_mean_absolute_error: 3.6132
10312  epoch_end_callback epoch 9526 lr 3.90625e-06
10313  Epoch 9528/10000
10314   - 0s - loss: 1.2529e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1670 - val_mean_absolute_error: 3.6134
10315  epoch_end_callback epoch 9527 lr 3.90625e-06
10316  Epoch 9529/10000
10317   - 0s - loss: 1.2261e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1700 - val_mean_absolute_error: 3.6133
10318  epoch_end_callback epoch 9528 lr 3.90625e-06
10319  Epoch 9530/10000
10320   - 0s - loss: 1.2629e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1679 - val_mean_absolute_error: 3.6134
10321
10322  Epoch 09530: saving model to ./model/
       model_Epoch9530_val_mean_absolute_error3.613.h5
10323  epoch_end_callback epoch 9529 lr 3.90625e-06
10324  Epoch 9531/10000
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10325    - 0s - loss: 1.2515e-04 - mean_absolute_error: 0.0025 -
         val_loss: 32.1697 - val_mean_absolute_error: 3.6135
10326  epoch_end_callback epoch 9530 lr 3.90625e-06
10327  Epoch 9532/10000
10328    - 0s - loss: 1.2711e-04 - mean_absolute_error: 0.0028 -
         val_loss: 32.1717 - val_mean_absolute_error: 3.6137
10329  epoch_end_callback epoch 9531 lr 3.90625e-06
10330  Epoch 9533/10000
10331    - 0s - loss: 1.2815e-04 - mean_absolute_error: 0.0025 -
         val_loss: 32.1698 - val_mean_absolute_error: 3.6132
10332  epoch_end_callback epoch 9532 lr 3.90625e-06
10333  Epoch 9534/10000
10334    - 0s - loss: 1.2442e-04 - mean_absolute_error: 0.0025 -
         val_loss: 32.1619 - val_mean_absolute_error: 3.6139
10335  epoch_end_callback epoch 9533 lr 3.90625e-06
10336  Epoch 9535/10000
10337    - 0s - loss: 1.2503e-04 - mean_absolute_error: 0.0029 -
         val_loss: 32.1720 - val_mean_absolute_error: 3.6133
10338  epoch_end_callback epoch 9534 lr 3.90625e-06
10339  Epoch 9536/10000
10340    - 0s - loss: 1.2216e-04 - mean_absolute_error: 0.0026 -
         val_loss: 32.1710 - val_mean_absolute_error: 3.6133
10341  epoch_end_callback epoch 9535 lr 3.90625e-06
10342  Epoch 9537/10000
10343    - 0s - loss: 1.2512e-04 - mean_absolute_error: 0.0028 -
         val_loss: 32.1751 - val_mean_absolute_error: 3.6137
10344  epoch_end_callback epoch 9536 lr 3.90625e-06
10345  Epoch 9538/10000
10346    - 0s - loss: 1.2557e-04 - mean_absolute_error: 0.0029 -
         val_loss: 32.1690 - val_mean_absolute_error: 3.6133
10347  epoch_end_callback epoch 9537 lr 3.90625e-06
10348  Epoch 9539/10000
10349    - 0s - loss: 1.2578e-04 - mean_absolute_error: 0.0024 -
         val_loss: 32.1697 - val_mean_absolute_error: 3.6131
10350  epoch_end_callback epoch 9538 lr 3.90625e-06
10351  Epoch 9540/10000
10352    - 0s - loss: 1.3052e-04 - mean_absolute_error: 0.0027 -
```

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10352  val_loss: 32.1694 - val_mean_absolute_error: 3.6132
10353
10354  Epoch 09540: saving model to ./model/
       model_Epoch9540_val_mean_absolute_error3.613.h5
10355  epoch_end_callback epoch 9539 lr 3.90625e-06
10356  Epoch 9541/10000
10357   - 0s - loss: 1.2512e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1658 - val_mean_absolute_error: 3.6132
10358  epoch_end_callback epoch 9540 lr 3.90625e-06
10359  Epoch 9542/10000
10360   - 0s - loss: 1.2525e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1582 - val_mean_absolute_error: 3.6133
10361  epoch_end_callback epoch 9541 lr 3.90625e-06
10362  Epoch 9543/10000
10363   - 0s - loss: 1.2074e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1646 - val_mean_absolute_error: 3.6132
10364  epoch_end_callback epoch 9542 lr 3.90625e-06
10365  Epoch 9544/10000
10366   - 0s - loss: 1.2674e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1694 - val_mean_absolute_error: 3.6133
10367  epoch_end_callback epoch 9543 lr 3.90625e-06
10368  Epoch 9545/10000
10369   - 0s - loss: 1.3332e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1706 - val_mean_absolute_error: 3.6133
10370  epoch_end_callback epoch 9544 lr 3.90625e-06
10371  Epoch 9546/10000
10372   - 0s - loss: 1.2440e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1719 - val_mean_absolute_error: 3.6133
10373  epoch_end_callback epoch 9545 lr 3.90625e-06
10374  Epoch 9547/10000
10375   - 0s - loss: 1.2363e-04 - mean_absolute_error: 0.0025 -
       val_loss: 32.1748 - val_mean_absolute_error: 3.6137
10376  epoch_end_callback epoch 9546 lr 3.90625e-06
10377  Epoch 9548/10000
10378   - 0s - loss: 1.2523e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1782 - val_mean_absolute_error: 3.6131
10379  epoch_end_callback epoch 9547 lr 3.90625e-06
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10380  Epoch 9549/10000
10381   - 0s - loss: 1.2698e-04 - mean_absolute_error: 0.0029 -
       val_loss: 32.1697 - val_mean_absolute_error: 3.6134
10382  epoch_end_callback epoch 9548 lr 3.90625e-06
10383  Epoch 9550/10000
10384   - 0s - loss: 1.2734e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1672 - val_mean_absolute_error: 3.6133
10385
10386  Epoch 09550: saving model to ./model/
       model_Epoch9550_val_mean_absolute_error3.613.h5
10387  epoch_end_callback epoch 9549 lr 3.90625e-06
10388  Epoch 9551/10000
10389   - 0s - loss: 1.2411e-04 - mean_absolute_error: 0.0025 -
       val_loss: 32.1647 - val_mean_absolute_error: 3.6129
10390  epoch_end_callback epoch 9550 lr 3.90625e-06
10391  Epoch 9552/10000
10392   - 0s - loss: 1.2614e-04 - mean_absolute_error: 0.0029 -
       val_loss: 32.1717 - val_mean_absolute_error: 3.6133
10393  epoch_end_callback epoch 9551 lr 3.90625e-06
10394  Epoch 9553/10000
10395   - 0s - loss: 1.1254e-04 - mean_absolute_error: 0.0023 -
       val_loss: 32.1704 - val_mean_absolute_error: 3.6133
10396  epoch_end_callback epoch 9552 lr 3.90625e-06
10397  Epoch 9554/10000
10398   - 0s - loss: 1.2900e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1740 - val_mean_absolute_error: 3.6131
10399  epoch_end_callback epoch 9553 lr 3.90625e-06
10400  Epoch 9555/10000
10401   - 0s - loss: 1.2479e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1686 - val_mean_absolute_error: 3.6135
10402  epoch_end_callback epoch 9554 lr 3.90625e-06
10403  Epoch 9556/10000
10404   - 0s - loss: 1.2099e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1709 - val_mean_absolute_error: 3.6132
10405  epoch_end_callback epoch 9555 lr 3.90625e-06
10406  Epoch 9557/10000
10407   - 0s - loss: 1.2225e-04 - mean_absolute_error: 0.0028 -
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10407  val_loss: 32.1683 - val_mean_absolute_error: 3.6132
10408  epoch_end_callback epoch 9556 lr 3.90625e-06
10409  Epoch 9558/10000
10410   - 0s - loss: 1.2574e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1719 - val_mean_absolute_error: 3.6133
10411  epoch_end_callback epoch 9557 lr 3.90625e-06
10412  Epoch 9559/10000
10413   - 0s - loss: 1.2416e-04 - mean_absolute_error: 0.0025 -
       val_loss: 32.1737 - val_mean_absolute_error: 3.6132
10414  epoch_end_callback epoch 9558 lr 3.90625e-06
10415  Epoch 9560/10000
10416   - 0s - loss: 1.2716e-04 - mean_absolute_error: 0.0030 -
       val_loss: 32.1707 - val_mean_absolute_error: 3.6134
10417
10418  Epoch 09560: saving model to ./model/
       model_Epoch9560_val_mean_absolute_error3.613.h5
10419  epoch_end_callback epoch 9559 lr 3.90625e-06
10420  Epoch 9561/10000
10421   - 0s - loss: 1.2332e-04 - mean_absolute_error: 0.0025 -
       val_loss: 32.1729 - val_mean_absolute_error: 3.6134
10422  epoch_end_callback epoch 9560 lr 3.90625e-06
10423  Epoch 9562/10000
10424   - 0s - loss: 1.2348e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1727 - val_mean_absolute_error: 3.6133
10425  epoch_end_callback epoch 9561 lr 3.90625e-06
10426  Epoch 9563/10000
10427   - 0s - loss: 1.2634e-04 - mean_absolute_error: 0.0030 -
       val_loss: 32.1723 - val_mean_absolute_error: 3.6133
10428  epoch_end_callback epoch 9562 lr 3.90625e-06
10429  Epoch 9564/10000
10430   - 0s - loss: 1.2605e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1758 - val_mean_absolute_error: 3.6134
10431  epoch_end_callback epoch 9563 lr 3.90625e-06
10432  Epoch 9565/10000
10433   - 0s - loss: 1.2288e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1717 - val_mean_absolute_error: 3.6139
10434  epoch_end_callback epoch 9564 lr 3.90625e-06
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10435 Epoch 9566/10000
10436  - 0s - loss: 1.2418e-04 - mean_absolute_error: 0.0030 -
       val_loss: 32.1746 - val_mean_absolute_error: 3.6137
10437 epoch_end_callback epoch 9565 lr 3.90625e-06
10438 Epoch 9567/10000
10439  - 0s - loss: 1.2448e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1680 - val_mean_absolute_error: 3.6133
10440 epoch_end_callback epoch 9566 lr 3.90625e-06
10441 Epoch 9568/10000
10442  - 0s - loss: 1.2338e-04 - mean_absolute_error: 0.0029 -
       val_loss: 32.1752 - val_mean_absolute_error: 3.6136
10443 epoch_end_callback epoch 9567 lr 3.90625e-06
10444 Epoch 9569/10000
10445  - 0s - loss: 1.2352e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1779 - val_mean_absolute_error: 3.6137
10446 epoch_end_callback epoch 9568 lr 3.90625e-06
10447 Epoch 9570/10000
10448  - 0s - loss: 1.2359e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1742 - val_mean_absolute_error: 3.6137
10449
10450 Epoch 09570: saving model to ./model/
       model_Epoch9570_val_mean_absolute_error3.614.h5
10451 epoch_end_callback epoch 9569 lr 3.90625e-06
10452 Epoch 9571/10000
10453  - 0s - loss: 1.2380e-04 - mean_absolute_error: 0.0025 -
       val_loss: 32.1731 - val_mean_absolute_error: 3.6136
10454 epoch_end_callback epoch 9570 lr 3.90625e-06
10455 Epoch 9572/10000
10456  - 0s - loss: 1.1168e-04 - mean_absolute_error: 0.0024 -
       val_loss: 32.1712 - val_mean_absolute_error: 3.6132
10457 epoch_end_callback epoch 9571 lr 3.90625e-06
10458 Epoch 9573/10000
10459  - 0s - loss: 1.2448e-04 - mean_absolute_error: 0.0031 -
       val_loss: 32.1726 - val_mean_absolute_error: 3.6131
10460 epoch_end_callback epoch 9572 lr 3.90625e-06
10461 Epoch 9574/10000
10462  - 0s - loss: 1.2733e-04 - mean_absolute_error: 0.0028 -
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10462  val_loss: 32.1651 - val_mean_absolute_error: 3.6134
10463  epoch_end_callback epoch 9573 lr 3.90625e-06
10464  Epoch 9575/10000
10465   - 0s - loss: 1.2390e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1748 - val_mean_absolute_error: 3.6136
10466  epoch_end_callback epoch 9574 lr 3.90625e-06
10467  Epoch 9576/10000
10468   - 0s - loss: 1.2080e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1732 - val_mean_absolute_error: 3.6132
10469  epoch_end_callback epoch 9575 lr 3.90625e-06
10470  Epoch 9577/10000
10471   - 0s - loss: 1.2082e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1716 - val_mean_absolute_error: 3.6135
10472  epoch_end_callback epoch 9576 lr 3.90625e-06
10473  Epoch 9578/10000
10474   - 0s - loss: 1.2648e-04 - mean_absolute_error: 0.0024 -
       val_loss: 32.1733 - val_mean_absolute_error: 3.6136
10475  epoch_end_callback epoch 9577 lr 3.90625e-06
10476  Epoch 9579/10000
10477   - 0s - loss: 1.3063e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1691 - val_mean_absolute_error: 3.6133
10478  epoch_end_callback epoch 9578 lr 3.90625e-06
10479  Epoch 9580/10000
10480   - 0s - loss: 1.1794e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1661 - val_mean_absolute_error: 3.6134
10481
10482  Epoch 09580: saving model to ./model/
       model_Epoch9580_val_mean_absolute_error3.613.h5
10483  epoch_end_callback epoch 9579 lr 3.90625e-06
10484  Epoch 9581/10000
10485   - 0s - loss: 1.2575e-04 - mean_absolute_error: 0.0029 -
       val_loss: 32.1808 - val_mean_absolute_error: 3.6136
10486  epoch_end_callback epoch 9580 lr 3.90625e-06
10487  Epoch 9582/10000
10488   - 0s - loss: 1.2149e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1736 - val_mean_absolute_error: 3.6133
10489  epoch_end_callback epoch 9581 lr 3.90625e-06
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10490  Epoch 9583/10000
10491   - 0s - loss: 1.2827e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1702 - val_mean_absolute_error: 3.6133
10492  epoch_end_callback epoch 9582 lr 3.90625e-06
10493  Epoch 9584/10000
10494   - 0s - loss: 1.2167e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1749 - val_mean_absolute_error: 3.6137
10495  epoch_end_callback epoch 9583 lr 3.90625e-06
10496  Epoch 9585/10000
10497   - 0s - loss: 1.2732e-04 - mean_absolute_error: 0.0025 -
       val_loss: 32.1729 - val_mean_absolute_error: 3.6134
10498  epoch_end_callback epoch 9584 lr 3.90625e-06
10499  Epoch 9586/10000
10500   - 0s - loss: 1.2719e-04 - mean_absolute_error: 0.0029 -
       val_loss: 32.1700 - val_mean_absolute_error: 3.6133
10501  epoch_end_callback epoch 9585 lr 3.90625e-06
10502  Epoch 9587/10000
10503   - 0s - loss: 1.1062e-04 - mean_absolute_error: 0.0022 -
       val_loss: 32.1717 - val_mean_absolute_error: 3.6130
10504  epoch_end_callback epoch 9586 lr 3.90625e-06
10505  Epoch 9588/10000
10506   - 0s - loss: 1.2489e-04 - mean_absolute_error: 0.0029 -
       val_loss: 32.1705 - val_mean_absolute_error: 3.6136
10507  epoch_end_callback epoch 9587 lr 3.90625e-06
10508  Epoch 9589/10000
10509   - 0s - loss: 1.2279e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1847 - val_mean_absolute_error: 3.6139
10510  epoch_end_callback epoch 9588 lr 3.90625e-06
10511  Epoch 9590/10000
10512   - 0s - loss: 1.2065e-04 - mean_absolute_error: 0.0029 -
       val_loss: 32.1756 - val_mean_absolute_error: 3.6135
10513
10514  Epoch 09590: saving model to ./model/
       model_Epoch9590_val_mean_absolute_error3.613.h5
10515  epoch_end_callback epoch 9589 lr 3.90625e-06
10516  Epoch 9591/10000
10517   - 0s - loss: 1.2456e-04 - mean_absolute_error: 0.0028 -
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10517  val_loss: 32.1712 - val_mean_absolute_error: 3.6135
10518  epoch_end_callback epoch 9590 lr 3.90625e-06
10519  Epoch 9592/10000
10520   - 0s - loss: 1.2145e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1721 - val_mean_absolute_error: 3.6132
10521  epoch_end_callback epoch 9591 lr 3.90625e-06
10522  Epoch 9593/10000
10523   - 0s - loss: 1.2652e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1719 - val_mean_absolute_error: 3.6135
10524  epoch_end_callback epoch 9592 lr 3.90625e-06
10525  Epoch 9594/10000
10526   - 0s - loss: 1.2478e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1703 - val_mean_absolute_error: 3.6137
10527  epoch_end_callback epoch 9593 lr 3.90625e-06
10528  Epoch 9595/10000
10529   - 0s - loss: 1.2069e-04 - mean_absolute_error: 0.0025 -
       val_loss: 32.1671 - val_mean_absolute_error: 3.6134
10530  epoch_end_callback epoch 9594 lr 3.90625e-06
10531  Epoch 9596/10000
10532   - 0s - loss: 1.2427e-04 - mean_absolute_error: 0.0029 -
       val_loss: 32.1781 - val_mean_absolute_error: 3.6139
10533  epoch_end_callback epoch 9595 lr 3.90625e-06
10534  Epoch 9597/10000
10535   - 0s - loss: 1.2295e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1751 - val_mean_absolute_error: 3.6138
10536  epoch_end_callback epoch 9596 lr 3.90625e-06
10537  Epoch 9598/10000
10538   - 0s - loss: 1.2366e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1730 - val_mean_absolute_error: 3.6137
10539  epoch_end_callback epoch 9597 lr 3.90625e-06
10540  Epoch 9599/10000
10541   - 0s - loss: 1.2548e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1732 - val_mean_absolute_error: 3.6136
10542  epoch_end_callback epoch 9598 lr 3.90625e-06
10543  Epoch 9600/10000
10544   - 0s - loss: 1.2453e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1753 - val_mean_absolute_error: 3.6135
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10545
10546  Epoch 09600: saving model to ./model/
       model_Epoch9600_val_mean_absolute_error3.613.h5
10547  epoch_end_callback epoch 9599 lr 3.90625e-06
10548  Epoch 9601/10000
10549   - 0s - loss: 1.2462e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1656 - val_mean_absolute_error: 3.6133
10550  epoch_end_callback epoch 9600 lr 3.90625e-06
10551  Epoch 9602/10000
10552   - 0s - loss: 1.2523e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1687 - val_mean_absolute_error: 3.6136
10553  epoch_end_callback epoch 9601 lr 3.90625e-06
10554  Epoch 9603/10000
10555   - 0s - loss: 1.2235e-04 - mean_absolute_error: 0.0029 -
       val_loss: 32.1678 - val_mean_absolute_error: 3.6134
10556  epoch_end_callback epoch 9602 lr 3.90625e-06
10557  Epoch 9604/10000
10558   - 0s - loss: 1.2465e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1703 - val_mean_absolute_error: 3.6135
10559  epoch_end_callback epoch 9603 lr 3.90625e-06
10560  Epoch 9605/10000
10561   - 0s - loss: 1.1935e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1709 - val_mean_absolute_error: 3.6137
10562  epoch_end_callback epoch 9604 lr 3.90625e-06
10563  Epoch 9606/10000
10564   - 0s - loss: 1.1138e-04 - mean_absolute_error: 0.0024 -
       val_loss: 32.1730 - val_mean_absolute_error: 3.6136
10565  epoch_end_callback epoch 9605 lr 3.90625e-06
10566  Epoch 9607/10000
10567   - 0s - loss: 1.2685e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1738 - val_mean_absolute_error: 3.6135
10568  epoch_end_callback epoch 9606 lr 3.90625e-06
10569  Epoch 9608/10000
10570   - 0s - loss: 1.2572e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1723 - val_mean_absolute_error: 3.6135
10571  epoch_end_callback epoch 9607 lr 3.90625e-06
10572  Epoch 9609/10000
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10573     - 0s - loss: 1.2088e-04 - mean_absolute_error: 0.0026 -
          val_loss: 32.1711 - val_mean_absolute_error: 3.6133
10574 epoch_end_callback epoch 9608 lr 3.90625e-06
10575 Epoch 9610/10000
10576     - 0s - loss: 1.2805e-04 - mean_absolute_error: 0.0026 -
          val_loss: 32.1715 - val_mean_absolute_error: 3.6134
10577
10578 Epoch 09610: saving model to ./model/
          model_Epoch9610_val_mean_absolute_error3.613.h5
10579 epoch_end_callback epoch 9609 lr 3.90625e-06
10580 Epoch 9611/10000
10581     - 0s - loss: 1.2510e-04 - mean_absolute_error: 0.0027 -
          val_loss: 32.1620 - val_mean_absolute_error: 3.6134
10582 epoch_end_callback epoch 9610 lr 3.90625e-06
10583 Epoch 9612/10000
10584     - 0s - loss: 1.2474e-04 - mean_absolute_error: 0.0028 -
          val_loss: 32.1712 - val_mean_absolute_error: 3.6137
10585 epoch_end_callback epoch 9611 lr 3.90625e-06
10586 Epoch 9613/10000
10587     - 0s - loss: 1.2242e-04 - mean_absolute_error: 0.0027 -
          val_loss: 32.1728 - val_mean_absolute_error: 3.6133
10588 epoch_end_callback epoch 9612 lr 3.90625e-06
10589 Epoch 9614/10000
10590     - 0s - loss: 1.2065e-04 - mean_absolute_error: 0.0027 -
          val_loss: 32.1703 - val_mean_absolute_error: 3.6134
10591 epoch_end_callback epoch 9613 lr 3.90625e-06
10592 Epoch 9615/10000
10593     - 0s - loss: 1.2415e-04 - mean_absolute_error: 0.0027 -
          val_loss: 32.1738 - val_mean_absolute_error: 3.6134
10594 epoch_end_callback epoch 9614 lr 3.90625e-06
10595 Epoch 9616/10000
10596     - 0s - loss: 1.2340e-04 - mean_absolute_error: 0.0028 -
          val_loss: 32.1687 - val_mean_absolute_error: 3.6134
10597 epoch_end_callback epoch 9615 lr 3.90625e-06
10598 Epoch 9617/10000
10599     - 0s - loss: 1.2136e-04 - mean_absolute_error: 0.0027 -
          val_loss: 32.1709 - val_mean_absolute_error: 3.6136
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10600  epoch_end_callback epoch 9616 lr 3.90625e-06
10601  Epoch 9618/10000
10602   - 0s - loss: 1.2337e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1668 - val_mean_absolute_error: 3.6137
10603  epoch_end_callback epoch 9617 lr 3.90625e-06
10604  Epoch 9619/10000
10605   - 0s - loss: 1.2658e-04 - mean_absolute_error: 0.0029 -
       val_loss: 32.1710 - val_mean_absolute_error: 3.6136
10606  epoch_end_callback epoch 9618 lr 3.90625e-06
10607  Epoch 9620/10000
10608   - 0s - loss: 1.2599e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1729 - val_mean_absolute_error: 3.6138
10609
10610  Epoch 09620: saving model to ./model/
       model_Epoch9620_val_mean_absolute_error3.614.h5
10611  epoch_end_callback epoch 9619 lr 3.90625e-06
10612  Epoch 9621/10000
10613   - 0s - loss: 1.2413e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1619 - val_mean_absolute_error: 3.6134
10614  epoch_end_callback epoch 9620 lr 3.90625e-06
10615  Epoch 9622/10000
10616   - 0s - loss: 1.2415e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1728 - val_mean_absolute_error: 3.6137
10617  epoch_end_callback epoch 9621 lr 3.90625e-06
10618  Epoch 9623/10000
10619   - 0s - loss: 1.2523e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1747 - val_mean_absolute_error: 3.6143
10620  epoch_end_callback epoch 9622 lr 3.90625e-06
10621  Epoch 9624/10000
10622   - 0s - loss: 1.2477e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1758 - val_mean_absolute_error: 3.6139
10623  epoch_end_callback epoch 9623 lr 3.90625e-06
10624  Epoch 9625/10000
10625   - 0s - loss: 1.2397e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1699 - val_mean_absolute_error: 3.6136
10626  epoch_end_callback epoch 9624 lr 3.90625e-06
10627  Epoch 9626/10000
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10628     - 0s - loss: 1.2392e-04 - mean_absolute_error: 0.0028 -
          val_loss: 32.1737 - val_mean_absolute_error: 3.6136
10629  epoch_end_callback epoch 9625 lr 3.90625e-06
10630  Epoch 9627/10000
10631     - 0s - loss: 1.2632e-04 - mean_absolute_error: 0.0025 -
          val_loss: 32.1736 - val_mean_absolute_error: 3.6138
10632  epoch_end_callback epoch 9626 lr 3.90625e-06
10633  Epoch 9628/10000
10634     - 0s - loss: 1.2109e-04 - mean_absolute_error: 0.0026 -
          val_loss: 32.1690 - val_mean_absolute_error: 3.6135
10635  epoch_end_callback epoch 9627 lr 3.90625e-06
10636  Epoch 9629/10000
10637     - 0s - loss: 1.2276e-04 - mean_absolute_error: 0.0027 -
          val_loss: 32.1728 - val_mean_absolute_error: 3.6137
10638  epoch_end_callback epoch 9628 lr 3.90625e-06
10639  Epoch 9630/10000
10640     - 0s - loss: 1.0982e-04 - mean_absolute_error: 0.0023 -
          val_loss: 32.1747 - val_mean_absolute_error: 3.6133
10641
10642  Epoch 09630: saving model to ./model/
          model_Epoch9630_val_mean_absolute_error3.613.h5
10643  epoch_end_callback epoch 9629 lr 3.90625e-06
10644  Epoch 9631/10000
10645     - 0s - loss: 1.2462e-04 - mean_absolute_error: 0.0031 -
          val_loss: 32.1740 - val_mean_absolute_error: 3.6137
10646  epoch_end_callback epoch 9630 lr 3.90625e-06
10647  Epoch 9632/10000
10648     - 0s - loss: 1.2363e-04 - mean_absolute_error: 0.0025 -
          val_loss: 32.1715 - val_mean_absolute_error: 3.6136
10649  epoch_end_callback epoch 9631 lr 3.90625e-06
10650  Epoch 9633/10000
10651     - 0s - loss: 1.2607e-04 - mean_absolute_error: 0.0029 -
          val_loss: 32.1733 - val_mean_absolute_error: 3.6138
10652  epoch_end_callback epoch 9632 lr 3.90625e-06
10653  Epoch 9634/10000
10654     - 0s - loss: 1.2302e-04 - mean_absolute_error: 0.0026 -
          val_loss: 32.1740 - val_mean_absolute_error: 3.6137
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10655	epoch_end_callback epoch 9633 lr 3.90625e-06
10656	Epoch 9635/10000
10657	- 0s - loss: 1.2315e-04 - mean_absolute_error: 0.0025 - val_loss: 32.1752 - val_mean_absolute_error: 3.6136
10658	epoch_end_callback epoch 9634 lr 3.90625e-06
10659	Epoch 9636/10000
10660	- 0s - loss: 1.2130e-04 - mean_absolute_error: 0.0027 - val_loss: 32.1755 - val_mean_absolute_error: 3.6136
10661	epoch_end_callback epoch 9635 lr 3.90625e-06
10662	Epoch 9637/10000
10663	- 0s - loss: 1.2525e-04 - mean_absolute_error: 0.0027 - val_loss: 32.1765 - val_mean_absolute_error: 3.6135
10664	epoch_end_callback epoch 9636 lr 3.90625e-06
10665	Epoch 9638/10000
10666	- 0s - loss: 1.2461e-04 - mean_absolute_error: 0.0027 - val_loss: 32.1724 - val_mean_absolute_error: 3.6134
10667	epoch_end_callback epoch 9637 lr 3.90625e-06
10668	Epoch 9639/10000
10669	- 0s - loss: 1.2128e-04 - mean_absolute_error: 0.0026 - val_loss: 32.1731 - val_mean_absolute_error: 3.6134
10670	epoch_end_callback epoch 9638 lr 3.90625e-06
10671	Epoch 9640/10000
10672	- 0s - loss: 1.2182e-04 - mean_absolute_error: 0.0030 - val_loss: 32.1706 - val_mean_absolute_error: 3.6133
10673	
10674	Epoch 09640: saving model to ./model/model_Epoch9640_val_mean_absolute_error3.613.h5
10675	epoch_end_callback epoch 9639 lr 3.90625e-06
10676	Epoch 9641/10000
10677	- 0s - loss: 1.2619e-04 - mean_absolute_error: 0.0027 - val_loss: 32.1674 - val_mean_absolute_error: 3.6132
10678	epoch_end_callback epoch 9640 lr 3.90625e-06
10679	Epoch 9642/10000
10680	- 0s - loss: 1.2029e-04 - mean_absolute_error: 0.0027 - val_loss: 32.1630 - val_mean_absolute_error: 3.6130
10681	epoch_end_callback epoch 9641 lr 3.90625e-06
10682	Epoch 9643/10000

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10683    - 0s - loss: 1.2350e-04 - mean_absolute_error: 0.0028 -
         val_loss: 32.1708 - val_mean_absolute_error: 3.6137
10684  epoch_end_callback epoch 9642 lr 3.90625e-06
10685  Epoch 9644/10000
10686    - 0s - loss: 1.2350e-04 - mean_absolute_error: 0.0027 -
         val_loss: 32.1729 - val_mean_absolute_error: 3.6135
10687  epoch_end_callback epoch 9643 lr 3.90625e-06
10688  Epoch 9645/10000
10689    - 0s - loss: 1.2240e-04 - mean_absolute_error: 0.0027 -
         val_loss: 32.1700 - val_mean_absolute_error: 3.6136
10690  epoch_end_callback epoch 9644 lr 3.90625e-06
10691  Epoch 9646/10000
10692    - 0s - loss: 1.2429e-04 - mean_absolute_error: 0.0026 -
         val_loss: 32.1733 - val_mean_absolute_error: 3.6141
10693  epoch_end_callback epoch 9645 lr 3.90625e-06
10694  Epoch 9647/10000
10695    - 0s - loss: 1.2027e-04 - mean_absolute_error: 0.0026 -
         val_loss: 32.1763 - val_mean_absolute_error: 3.6136
10696  epoch_end_callback epoch 9646 lr 3.90625e-06
10697  Epoch 9648/10000
10698    - 0s - loss: 1.2788e-04 - mean_absolute_error: 0.0026 -
         val_loss: 32.1723 - val_mean_absolute_error: 3.6138
10699  epoch_end_callback epoch 9647 lr 3.90625e-06
10700  Epoch 9649/10000
10701    - 0s - loss: 1.1181e-04 - mean_absolute_error: 0.0026 -
         val_loss: 32.1659 - val_mean_absolute_error: 3.6134
10702  epoch_end_callback epoch 9648 lr 3.90625e-06
10703  Epoch 9650/10000
10704    - 0s - loss: 1.2208e-04 - mean_absolute_error: 0.0027 -
         val_loss: 32.1717 - val_mean_absolute_error: 3.6137
10705
10706  Epoch 09650: saving model to ./model/
         model_Epoch9650_val_mean_absolute_error3.614.h5
10707  epoch_end_callback epoch 9649 lr 3.90625e-06
10708  Epoch 9651/10000
10709    - 0s - loss: 1.2174e-04 - mean_absolute_error: 0.0025 -
         val_loss: 32.1768 - val_mean_absolute_error: 3.6132
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10710  epoch_end_callback epoch 9650 lr 3.90625e-06
10711  Epoch 9652/10000
10712   - 0s - loss: 1.2387e-04 - mean_absolute_error: 0.0028 -
        val_loss: 32.1742 - val_mean_absolute_error: 3.6137
10713  epoch_end_callback epoch 9651 lr 3.90625e-06
10714  Epoch 9653/10000
10715   - 0s - loss: 1.1952e-04 - mean_absolute_error: 0.0025 -
        val_loss: 32.1704 - val_mean_absolute_error: 3.6134
10716  epoch_end_callback epoch 9652 lr 3.90625e-06
10717  Epoch 9654/10000
10718   - 0s - loss: 1.2072e-04 - mean_absolute_error: 0.0026 -
        val_loss: 32.1717 - val_mean_absolute_error: 3.6132
10719  epoch_end_callback epoch 9653 lr 3.90625e-06
10720  Epoch 9655/10000
10721   - 0s - loss: 1.2775e-04 - mean_absolute_error: 0.0028 -
        val_loss: 32.1743 - val_mean_absolute_error: 3.6138
10722  epoch_end_callback epoch 9654 lr 3.90625e-06
10723  Epoch 9656/10000
10724   - 0s - loss: 1.2219e-04 - mean_absolute_error: 0.0028 -
        val_loss: 32.1715 - val_mean_absolute_error: 3.6136
10725  epoch_end_callback epoch 9655 lr 3.90625e-06
10726  Epoch 9657/10000
10727   - 0s - loss: 1.2467e-04 - mean_absolute_error: 0.0027 -
        val_loss: 32.1742 - val_mean_absolute_error: 3.6138
10728  epoch_end_callback epoch 9656 lr 3.90625e-06
10729  Epoch 9658/10000
10730   - 0s - loss: 1.2126e-04 - mean_absolute_error: 0.0025 -
        val_loss: 32.1720 - val_mean_absolute_error: 3.6138
10731  epoch_end_callback epoch 9657 lr 3.90625e-06
10732  Epoch 9659/10000
10733   - 0s - loss: 1.2166e-04 - mean_absolute_error: 0.0028 -
        val_loss: 32.1744 - val_mean_absolute_error: 3.6140
10734  epoch_end_callback epoch 9658 lr 3.90625e-06
10735  Epoch 9660/10000
10736   - 0s - loss: 1.2262e-04 - mean_absolute_error: 0.0028 -
        val_loss: 32.1794 - val_mean_absolute_error: 3.6138
10737
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10738  Epoch 09660: saving model to ./model/
       model_Epoch9660_val_mean_absolute_error3.614.h5
10739  epoch_end_callback epoch 9659 lr 3.90625e-06
10740  Epoch 9661/10000
10741   - 0s - loss: 1.2457e-04 - mean_absolute_error: 0.0025 -
       val_loss: 32.1685 - val_mean_absolute_error: 3.6130
10742  epoch_end_callback epoch 9660 lr 3.90625e-06
10743  Epoch 9662/10000
10744   - 0s - loss: 1.2486e-04 - mean_absolute_error: 0.0029 -
       val_loss: 32.1721 - val_mean_absolute_error: 3.6135
10745  epoch_end_callback epoch 9661 lr 3.90625e-06
10746  Epoch 9663/10000
10747   - 0s - loss: 1.2220e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1701 - val_mean_absolute_error: 3.6137
10748  epoch_end_callback epoch 9662 lr 3.90625e-06
10749  Epoch 9664/10000
10750   - 0s - loss: 1.2462e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1724 - val_mean_absolute_error: 3.6135
10751  epoch_end_callback epoch 9663 lr 3.90625e-06
10752  Epoch 9665/10000
10753   - 0s - loss: 1.2291e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1759 - val_mean_absolute_error: 3.6138
10754  epoch_end_callback epoch 9664 lr 3.90625e-06
10755  Epoch 9666/10000
10756   - 0s - loss: 1.2420e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1732 - val_mean_absolute_error: 3.6138
10757  epoch_end_callback epoch 9665 lr 3.90625e-06
10758  Epoch 9667/10000
10759   - 0s - loss: 1.2331e-04 - mean_absolute_error: 0.0029 -
       val_loss: 32.1755 - val_mean_absolute_error: 3.6138
10760  epoch_end_callback epoch 9666 lr 3.90625e-06
10761  Epoch 9668/10000
10762   - 0s - loss: 1.2080e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1747 - val_mean_absolute_error: 3.6139
10763  epoch_end_callback epoch 9667 lr 3.90625e-06
10764  Epoch 9669/10000
10765   - 0s - loss: 1.2142e-04 - mean_absolute_error: 0.0026 -
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10765  val_loss: 32.1697 - val_mean_absolute_error: 3.6135
10766  epoch_end_callback epoch 9668 lr 3.90625e-06
10767  Epoch 9670/10000
10768   - 0s - loss: 1.1949e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1751 - val_mean_absolute_error: 3.6139
10769
10770  Epoch 09670: saving model to ./model/
       model_Epoch9670_val_mean_absolute_error3.614.h5
10771  epoch_end_callback epoch 9669 lr 3.90625e-06
10772  Epoch 9671/10000
10773   - 0s - loss: 1.1067e-04 - mean_absolute_error: 0.0025 -
       val_loss: 32.1765 - val_mean_absolute_error: 3.6136
10774  epoch_end_callback epoch 9670 lr 3.90625e-06
10775  Epoch 9672/10000
10776   - 0s - loss: 1.2204e-04 - mean_absolute_error: 0.0030 -
       val_loss: 32.1740 - val_mean_absolute_error: 3.6140
10777  epoch_end_callback epoch 9671 lr 3.90625e-06
10778  Epoch 9673/10000
10779   - 0s - loss: 1.2368e-04 - mean_absolute_error: 0.0030 -
       val_loss: 32.1733 - val_mean_absolute_error: 3.6136
10780  epoch_end_callback epoch 9672 lr 3.90625e-06
10781  Epoch 9674/10000
10782   - 0s - loss: 1.2548e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1709 - val_mean_absolute_error: 3.6136
10783  epoch_end_callback epoch 9673 lr 3.90625e-06
10784  Epoch 9675/10000
10785   - 0s - loss: 1.1972e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1782 - val_mean_absolute_error: 3.6136
10786  epoch_end_callback epoch 9674 lr 3.90625e-06
10787  Epoch 9676/10000
10788   - 0s - loss: 1.2252e-04 - mean_absolute_error: 0.0024 -
       val_loss: 32.1720 - val_mean_absolute_error: 3.6138
10789  epoch_end_callback epoch 9675 lr 3.90625e-06
10790  Epoch 9677/10000
10791   - 0s - loss: 1.2503e-04 - mean_absolute_error: 0.0030 -
       val_loss: 32.1725 - val_mean_absolute_error: 3.6136
10792  epoch_end_callback epoch 9676 lr 3.90625e-06
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10793  Epoch 9678/10000
10794   - 0s - loss: 1.2126e-04 - mean_absolute_error: 0.0024 - val_loss: 32.1732 - val_mean_absolute_error: 3.6137
10795  epoch_end_callback epoch 9677 lr 3.90625e-06
10796  Epoch 9679/10000
10797   - 0s - loss: 1.2336e-04 - mean_absolute_error: 0.0028 - val_loss: 32.1745 - val_mean_absolute_error: 3.6139
10798  epoch_end_callback epoch 9678 lr 3.90625e-06
10799  Epoch 9680/10000
10800   - 0s - loss: 1.1980e-04 - mean_absolute_error: 0.0025 - val_loss: 32.1757 - val_mean_absolute_error: 3.6136
10801
10802  Epoch 09680: saving model to ./model/model_Epoch9680_val_mean_absolute_error3.614.h5
10803  epoch_end_callback epoch 9679 lr 3.90625e-06
10804  Epoch 9681/10000
10805   - 0s - loss: 1.2239e-04 - mean_absolute_error: 0.0026 - val_loss: 32.1664 - val_mean_absolute_error: 3.6135
10806  epoch_end_callback epoch 9680 lr 3.90625e-06
10807  Epoch 9682/10000
10808   - 0s - loss: 1.2315e-04 - mean_absolute_error: 0.0027 - val_loss: 32.1738 - val_mean_absolute_error: 3.6136
10809  epoch_end_callback epoch 9681 lr 3.90625e-06
10810  Epoch 9683/10000
10811   - 0s - loss: 1.2325e-04 - mean_absolute_error: 0.0027 - val_loss: 32.1728 - val_mean_absolute_error: 3.6138
10812  epoch_end_callback epoch 9682 lr 3.90625e-06
10813  Epoch 9684/10000
10814   - 0s - loss: 1.2392e-04 - mean_absolute_error: 0.0026 - val_loss: 32.1744 - val_mean_absolute_error: 3.6138
10815  epoch_end_callback epoch 9683 lr 3.90625e-06
10816  Epoch 9685/10000
10817   - 0s - loss: 1.1774e-04 - mean_absolute_error: 0.0028 - val_loss: 32.1777 - val_mean_absolute_error: 3.6138
10818  epoch_end_callback epoch 9684 lr 3.90625e-06
10819  Epoch 9686/10000
10820   - 0s - loss: 1.2240e-04 - mean_absolute_error: 0.0028 -
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10820  val_loss: 32.1730 - val_mean_absolute_error: 3.6135
10821  epoch_end_callback epoch 9685 lr 3.90625e-06
10822  Epoch 9687/10000
10823   - 0s - loss: 1.1659e-04 - mean_absolute_error: 0.0025 -
       val_loss: 32.1764 - val_mean_absolute_error: 3.6138
10824  epoch_end_callback epoch 9686 lr 3.90625e-06
10825  Epoch 9688/10000
10826   - 0s - loss: 1.2390e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1757 - val_mean_absolute_error: 3.6140
10827  epoch_end_callback epoch 9687 lr 3.90625e-06
10828  Epoch 9689/10000
10829   - 0s - loss: 1.2176e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1771 - val_mean_absolute_error: 3.6137
10830  epoch_end_callback epoch 9688 lr 3.90625e-06
10831  Epoch 9690/10000
10832   - 0s - loss: 1.2394e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1720 - val_mean_absolute_error: 3.6139
10833
10834  Epoch 09690: saving model to ./model/
       model_Epoch9690_val_mean_absolute_error3.614.h5
10835  epoch_end_callback epoch 9689 lr 3.90625e-06
10836  Epoch 9691/10000
10837   - 0s - loss: 1.2219e-04 - mean_absolute_error: 0.0025 -
       val_loss: 32.1704 - val_mean_absolute_error: 3.6138
10838  epoch_end_callback epoch 9690 lr 3.90625e-06
10839  Epoch 9692/10000
10840   - 0s - loss: 1.1924e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1776 - val_mean_absolute_error: 3.6141
10841  epoch_end_callback epoch 9691 lr 3.90625e-06
10842  Epoch 9693/10000
10843   - 0s - loss: 1.2851e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1752 - val_mean_absolute_error: 3.6139
10844  epoch_end_callback epoch 9692 lr 3.90625e-06
10845  Epoch 9694/10000
10846   - 0s - loss: 1.1866e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1724 - val_mean_absolute_error: 3.6139
10847  epoch_end_callback epoch 9693 lr 3.90625e-06
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10848  Epoch 9695/10000
10849   - 0s - loss: 1.2221e-04 - mean_absolute_error: 0.0026 -
        val_loss: 32.1728 - val_mean_absolute_error: 3.6137
10850  epoch_end_callback epoch 9694 lr 3.90625e-06
10851  Epoch 9696/10000
10852   - 0s - loss: 1.2332e-04 - mean_absolute_error: 0.0026 -
        val_loss: 32.1763 - val_mean_absolute_error: 3.6137
10853  epoch_end_callback epoch 9695 lr 3.90625e-06
10854  Epoch 9697/10000
10855   - 0s - loss: 1.0970e-04 - mean_absolute_error: 0.0024 -
        val_loss: 32.1764 - val_mean_absolute_error: 3.6137
10856  epoch_end_callback epoch 9696 lr 3.90625e-06
10857  Epoch 9698/10000
10858   - 0s - loss: 1.2504e-04 - mean_absolute_error: 0.0030 -
        val_loss: 32.1631 - val_mean_absolute_error: 3.6133
10859  epoch_end_callback epoch 9697 lr 3.90625e-06
10860  Epoch 9699/10000
10861   - 0s - loss: 1.1666e-04 - mean_absolute_error: 0.0026 -
        val_loss: 32.1729 - val_mean_absolute_error: 3.6138
10862  epoch_end_callback epoch 9698 lr 3.90625e-06
10863  Epoch 9700/10000
10864   - 0s - loss: 1.1948e-04 - mean_absolute_error: 0.0025 -
        val_loss: 32.1761 - val_mean_absolute_error: 3.6135
10865
10866  Epoch 09700: saving model to ./model/
        model_Epoch9700_val_mean_absolute_error3.613.h5
10867  epoch_end_callback epoch 9699 lr 3.90625e-06
10868  Epoch 9701/10000
10869   - 0s - loss: 1.2361e-04 - mean_absolute_error: 0.0027 -
        val_loss: 32.1734 - val_mean_absolute_error: 3.6140
10870  epoch_end_callback epoch 9700 lr 3.90625e-06
10871  Epoch 9702/10000
10872   - 0s - loss: 1.2156e-04 - mean_absolute_error: 0.0026 -
        val_loss: 32.1760 - val_mean_absolute_error: 3.6136
10873  epoch_end_callback epoch 9701 lr 3.90625e-06
10874  Epoch 9703/10000
10875   - 0s - loss: 1.2394e-04 - mean_absolute_error: 0.0026 -
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10875  val_loss: 32.1780 - val_mean_absolute_error: 3.6137
10876  epoch_end_callback epoch 9702 lr 3.90625e-06
10877  Epoch 9704/10000
10878   - 0s - loss: 1.1827e-04 - mean_absolute_error: 0.0024 -
       val_loss: 32.1621 - val_mean_absolute_error: 3.6132
10879  epoch_end_callback epoch 9703 lr 3.90625e-06
10880  Epoch 9705/10000
10881   - 0s - loss: 1.1304e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1720 - val_mean_absolute_error: 3.6136
10882  epoch_end_callback epoch 9704 lr 3.90625e-06
10883  Epoch 9706/10000
10884   - 0s - loss: 1.1848e-04 - mean_absolute_error: 0.0024 -
       val_loss: 32.1724 - val_mean_absolute_error: 3.6138
10885  epoch_end_callback epoch 9705 lr 3.90625e-06
10886  Epoch 9707/10000
10887   - 0s - loss: 1.2017e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1697 - val_mean_absolute_error: 3.6135
10888  epoch_end_callback epoch 9706 lr 3.90625e-06
10889  Epoch 9708/10000
10890   - 0s - loss: 1.2531e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1748 - val_mean_absolute_error: 3.6136
10891  epoch_end_callback epoch 9707 lr 3.90625e-06
10892  Epoch 9709/10000
10893   - 0s - loss: 1.1975e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1613 - val_mean_absolute_error: 3.6131
10894  epoch_end_callback epoch 9708 lr 3.90625e-06
10895  Epoch 9710/10000
10896   - 0s - loss: 1.1502e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1746 - val_mean_absolute_error: 3.6137
10897
10898  Epoch 09710: saving model to ./model/
       model_Epoch9710_val_mean_absolute_error3.614.h5
10899  epoch_end_callback epoch 9709 lr 3.90625e-06
10900  Epoch 9711/10000
10901   - 0s - loss: 1.1641e-04 - mean_absolute_error: 0.0025 -
       val_loss: 32.1734 - val_mean_absolute_error: 3.6136
10902  epoch_end_callback epoch 9710 lr 3.90625e-06
```

10903 Epoch 9712/10000
10904 - 0s - loss: 1.2178e-04 - mean_absolute_error: 0.0026 - val_loss: 32.1765 - val_mean_absolute_error: 3.6135
10905 epoch_end_callback epoch 9711 lr 3.90625e-06
10906 Epoch 9713/10000
10907 - 0s - loss: 1.2177e-04 - mean_absolute_error: 0.0027 - val_loss: 32.1816 - val_mean_absolute_error: 3.6139
10908 epoch_end_callback epoch 9712 lr 3.90625e-06
10909 Epoch 9714/10000
10910 - 0s - loss: 1.2163e-04 - mean_absolute_error: 0.0025 - val_loss: 32.1728 - val_mean_absolute_error: 3.6134
10911 epoch_end_callback epoch 9713 lr 3.90625e-06
10912 Epoch 9715/10000
10913 - 0s - loss: 1.1860e-04 - mean_absolute_error: 0.0027 - val_loss: 32.1725 - val_mean_absolute_error: 3.6137
10914 epoch_end_callback epoch 9714 lr 3.90625e-06
10915 Epoch 9716/10000
10916 - 0s - loss: 1.1866e-04 - mean_absolute_error: 0.0029 - val_loss: 32.1746 - val_mean_absolute_error: 3.6137
10917 epoch_end_callback epoch 9715 lr 3.90625e-06
10918 Epoch 9717/10000
10919 - 0s - loss: 1.2205e-04 - mean_absolute_error: 0.0027 - val_loss: 32.1703 - val_mean_absolute_error: 3.6131
10920 epoch_end_callback epoch 9716 lr 3.90625e-06
10921 Epoch 9718/10000
10922 - 0s - loss: 1.1986e-04 - mean_absolute_error: 0.0026 - val_loss: 32.1718 - val_mean_absolute_error: 3.6136
10923 epoch_end_callback epoch 9717 lr 3.90625e-06
10924 Epoch 9719/10000
10925 - 0s - loss: 1.2361e-04 - mean_absolute_error: 0.0027 - val_loss: 32.1739 - val_mean_absolute_error: 3.6135
10926 epoch_end_callback epoch 9718 lr 3.90625e-06
10927 Epoch 9720/10000
10928 - 0s - loss: 1.2567e-04 - mean_absolute_error: 0.0025 - val_loss: 32.1777 - val_mean_absolute_error: 3.6139
10929
10930 Epoch 09720: saving model to ./model/

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10930  model_Epoch9720_val_mean_absolute_error3.614.h5
10931  epoch_end_callback epoch 9719 lr 3.90625e-06
10932  Epoch 9721/10000
10933   - 0s - loss: 1.1729e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1728 - val_mean_absolute_error: 3.6134
10934  epoch_end_callback epoch 9720 lr 3.90625e-06
10935  Epoch 9722/10000
10936   - 0s - loss: 1.2375e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1749 - val_mean_absolute_error: 3.6134
10937  epoch_end_callback epoch 9721 lr 3.90625e-06
10938  Epoch 9723/10000
10939   - 0s - loss: 1.1666e-04 - mean_absolute_error: 0.0025 -
       val_loss: 32.1660 - val_mean_absolute_error: 3.6135
10940  epoch_end_callback epoch 9722 lr 3.90625e-06
10941  Epoch 9724/10000
10942   - 0s - loss: 1.1855e-04 - mean_absolute_error: 0.0029 -
       val_loss: 32.1732 - val_mean_absolute_error: 3.6135
10943  epoch_end_callback epoch 9723 lr 3.90625e-06
10944  Epoch 9725/10000
10945   - 0s - loss: 1.0880e-04 - mean_absolute_error: 0.0023 -
       val_loss: 32.1763 - val_mean_absolute_error: 3.6138
10946  epoch_end_callback epoch 9724 lr 3.90625e-06
10947  Epoch 9726/10000
10948   - 0s - loss: 1.1893e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1738 - val_mean_absolute_error: 3.6135
10949  epoch_end_callback epoch 9725 lr 3.90625e-06
10950  Epoch 9727/10000
10951   - 0s - loss: 1.2309e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1760 - val_mean_absolute_error: 3.6137
10952  epoch_end_callback epoch 9726 lr 3.90625e-06
10953  Epoch 9728/10000
10954   - 0s - loss: 1.2640e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1732 - val_mean_absolute_error: 3.6136
10955  epoch_end_callback epoch 9727 lr 3.90625e-06
10956  Epoch 9729/10000
10957   - 0s - loss: 1.2347e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1742 - val_mean_absolute_error: 3.6137
```

```
10958  epoch_end_callback epoch 9728 lr 3.90625e-06
10959  Epoch 9730/10000
10960   - 0s - loss: 1.2641e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1785 - val_mean_absolute_error: 3.6134
10961
10962  Epoch 09730: saving model to ./model/
       model_Epoch9730_val_mean_absolute_error3.613.h5
10963  epoch_end_callback epoch 9729 lr 3.90625e-06
10964  Epoch 9731/10000
10965   - 0s - loss: 1.1662e-04 - mean_absolute_error: 0.0024 -
       val_loss: 32.1861 - val_mean_absolute_error: 3.6139
10966  epoch_end_callback epoch 9730 lr 3.90625e-06
10967  Epoch 9732/10000
10968   - 0s - loss: 1.1497e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1745 - val_mean_absolute_error: 3.6138
10969  epoch_end_callback epoch 9731 lr 3.90625e-06
10970  Epoch 9733/10000
10971   - 0s - loss: 1.1757e-04 - mean_absolute_error: 0.0025 -
       val_loss: 32.1748 - val_mean_absolute_error: 3.6140
10972  epoch_end_callback epoch 9732 lr 3.90625e-06
10973  Epoch 9734/10000
10974   - 0s - loss: 1.2204e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1771 - val_mean_absolute_error: 3.6139
10975  epoch_end_callback epoch 9733 lr 3.90625e-06
10976  Epoch 9735/10000
10977   - 0s - loss: 1.1913e-04 - mean_absolute_error: 0.0025 -
       val_loss: 32.1753 - val_mean_absolute_error: 3.6140
10978  epoch_end_callback epoch 9734 lr 3.90625e-06
10979  Epoch 9736/10000
10980   - 0s - loss: 1.2085e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1747 - val_mean_absolute_error: 3.6137
10981  epoch_end_callback epoch 9735 lr 3.90625e-06
10982  Epoch 9737/10000
10983   - 0s - loss: 1.2306e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1800 - val_mean_absolute_error: 3.6143
10984  epoch_end_callback epoch 9736 lr 3.90625e-06
10985  Epoch 9738/10000
```

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10986    - 0s - loss: 1.1887e-04 - mean_absolute_error: 0.0028 -
         val_loss: 32.1791 - val_mean_absolute_error: 3.6135
10987  epoch_end_callback epoch 9737 lr 3.90625e-06
10988  Epoch 9739/10000
10989    - 0s - loss: 1.1899e-04 - mean_absolute_error: 0.0025 -
         val_loss: 32.1761 - val_mean_absolute_error: 3.6139
10990  epoch_end_callback epoch 9738 lr 3.90625e-06
10991  Epoch 9740/10000
10992    - 0s - loss: 1.2461e-04 - mean_absolute_error: 0.0028 -
         val_loss: 32.1707 - val_mean_absolute_error: 3.6138
10993
10994  Epoch 09740: saving model to ./model/
         model_Epoch9740_val_mean_absolute_error3.614.h5
10995  epoch_end_callback epoch 9739 lr 3.90625e-06
10996  Epoch 9741/10000
10997    - 0s - loss: 1.1569e-04 - mean_absolute_error: 0.0026 -
         val_loss: 32.1805 - val_mean_absolute_error: 3.6139
10998  epoch_end_callback epoch 9740 lr 3.90625e-06
10999  Epoch 9742/10000
11000    - 0s - loss: 1.2167e-04 - mean_absolute_error: 0.0028 -
         val_loss: 32.1787 - val_mean_absolute_error: 3.6137
11001  epoch_end_callback epoch 9741 lr 3.90625e-06
11002  Epoch 9743/10000
11003    - 0s - loss: 1.1953e-04 - mean_absolute_error: 0.0028 -
         val_loss: 32.1741 - val_mean_absolute_error: 3.6136
11004  epoch_end_callback epoch 9742 lr 3.90625e-06
11005  Epoch 9744/10000
11006    - 0s - loss: 1.1586e-04 - mean_absolute_error: 0.0024 -
         val_loss: 32.1791 - val_mean_absolute_error: 3.6138
11007  epoch_end_callback epoch 9743 lr 3.90625e-06
11008  Epoch 9745/10000
11009    - 0s - loss: 1.2335e-04 - mean_absolute_error: 0.0026 -
         val_loss: 32.1763 - val_mean_absolute_error: 3.6137
11010  epoch_end_callback epoch 9744 lr 3.90625e-06
11011  Epoch 9746/10000
11012    - 0s - loss: 1.2606e-04 - mean_absolute_error: 0.0025 -
         val_loss: 32.1760 - val_mean_absolute_error: 3.6140
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11013 epoch_end_callback epoch 9745 lr 3.90625e-06

11014 Epoch 9747/10000

11015 - 0s - loss: 1.2034e-04 - mean_absolute_error: 0.0027 - val_loss: 32.1830 - val_mean_absolute_error: 3.6139

11016 epoch_end_callback epoch 9746 lr 3.90625e-06

11017 Epoch 9748/10000

11018 - 0s - loss: 1.2039e-04 - mean_absolute_error: 0.0025 - val_loss: 32.1825 - val_mean_absolute_error: 3.6141

11019 epoch_end_callback epoch 9747 lr 3.90625e-06

11020 Epoch 9749/10000

11021 - 0s - loss: 1.2224e-04 - mean_absolute_error: 0.0027 - val_loss: 32.1793 - val_mean_absolute_error: 3.6140

11022 epoch_end_callback epoch 9748 lr 3.90625e-06

11023 Epoch 9750/10000

11024 - 0s - loss: 1.2190e-04 - mean_absolute_error: 0.0026 - val_loss: 32.1717 - val_mean_absolute_error: 3.6141

11025

11026 Epoch 09750: saving model to ./model/model_Epoch9750_val_mean_absolute_error3.614.h5

11027 epoch_end_callback epoch 9749 lr 3.90625e-06

11028 Epoch 9751/10000

11029 - 0s - loss: 1.2038e-04 - mean_absolute_error: 0.0028 - val_loss: 32.1757 - val_mean_absolute_error: 3.6141

11030 epoch_end_callback epoch 9750 lr 3.90625e-06

11031 Epoch 9752/10000

11032 - 0s - loss: 1.2187e-04 - mean_absolute_error: 0.0025 - val_loss: 32.1757 - val_mean_absolute_error: 3.6135

11033 epoch_end_callback epoch 9751 lr 3.90625e-06

11034 Epoch 9753/10000

11035 - 0s - loss: 1.2133e-04 - mean_absolute_error: 0.0026 - val_loss: 32.1780 - val_mean_absolute_error: 3.6139

11036 epoch_end_callback epoch 9752 lr 3.90625e-06

11037 Epoch 9754/10000

11038 - 0s - loss: 1.1937e-04 - mean_absolute_error: 0.0026 - val_loss: 32.1749 - val_mean_absolute_error: 3.6134

11039 epoch_end_callback epoch 9753 lr 3.90625e-06

11040 Epoch 9755/10000

11041   - 0s - loss: 1.1960e-04 - mean_absolute_error: 0.0027 - val_loss: 32.1765 - val_mean_absolute_error: 3.6139

11042 epoch_end_callback epoch 9754 lr 3.90625e-06

11043 Epoch 9756/10000

11044   - 0s - loss: 1.1920e-04 - mean_absolute_error: 0.0025 - val_loss: 32.1725 - val_mean_absolute_error: 3.6137

11045 epoch_end_callback epoch 9755 lr 3.90625e-06

11046 Epoch 9757/10000

11047   - 0s - loss: 1.1980e-04 - mean_absolute_error: 0.0026 - val_loss: 32.1728 - val_mean_absolute_error: 3.6137

11048 epoch_end_callback epoch 9756 lr 3.90625e-06

11049 Epoch 9758/10000

11050   - 0s - loss: 1.2214e-04 - mean_absolute_error: 0.0025 - val_loss: 32.1755 - val_mean_absolute_error: 3.6139

11051 epoch_end_callback epoch 9757 lr 3.90625e-06

11052 Epoch 9759/10000

11053   - 0s - loss: 1.2086e-04 - mean_absolute_error: 0.0028 - val_loss: 32.1748 - val_mean_absolute_error: 3.6134

11054 epoch_end_callback epoch 9758 lr 3.90625e-06

11055 Epoch 9760/10000

11056   - 0s - loss: 1.1830e-04 - mean_absolute_error: 0.0025 - val_loss: 32.1740 - val_mean_absolute_error: 3.6132

11057

11058 Epoch 09760: saving model to ./model/ model_Epoch9760_val_mean_absolute_error3.613.h5

11059 epoch_end_callback epoch 9759 lr 3.90625e-06

11060 Epoch 9761/10000

11061   - 0s - loss: 1.2313e-04 - mean_absolute_error: 0.0028 - val_loss: 32.1787 - val_mean_absolute_error: 3.6139

11062 epoch_end_callback epoch 9760 lr 3.90625e-06

11063 Epoch 9762/10000

11064   - 0s - loss: 1.2257e-04 - mean_absolute_error: 0.0028 - val_loss: 32.1737 - val_mean_absolute_error: 3.6135

11065 epoch_end_callback epoch 9761 lr 3.90625e-06

11066 Epoch 9763/10000

11067   - 0s - loss: 1.1777e-04 - mean_absolute_error: 0.0029 - val_loss: 32.1726 - val_mean_absolute_error: 3.6136

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11068 epoch_end_callback epoch 9762 lr 3.90625e-06
11069 Epoch 9764/10000
11070  - 0s - loss: 1.1658e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1778 - val_mean_absolute_error: 3.6137
11071 epoch_end_callback epoch 9763 lr 3.90625e-06
11072 Epoch 9765/10000
11073  - 0s - loss: 1.2136e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1765 - val_mean_absolute_error: 3.6140
11074 epoch_end_callback epoch 9764 lr 3.90625e-06
11075 Epoch 9766/10000
11076  - 0s - loss: 1.0891e-04 - mean_absolute_error: 0.0024 -
       val_loss: 32.1631 - val_mean_absolute_error: 3.6136
11077 epoch_end_callback epoch 9765 lr 3.90625e-06
11078 Epoch 9767/10000
11079  - 0s - loss: 1.1567e-04 - mean_absolute_error: 0.0030 -
       val_loss: 32.1763 - val_mean_absolute_error: 3.6136
11080 epoch_end_callback epoch 9766 lr 3.90625e-06
11081 Epoch 9768/10000
11082  - 0s - loss: 1.1616e-04 - mean_absolute_error: 0.0030 -
       val_loss: 32.1763 - val_mean_absolute_error: 3.6138
11083 epoch_end_callback epoch 9767 lr 3.90625e-06
11084 Epoch 9769/10000
11085  - 0s - loss: 1.2100e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1736 - val_mean_absolute_error: 3.6140
11086 epoch_end_callback epoch 9768 lr 3.90625e-06
11087 Epoch 9770/10000
11088  - 0s - loss: 1.0825e-04 - mean_absolute_error: 0.0023 -
       val_loss: 32.1816 - val_mean_absolute_error: 3.6137
11089
11090 Epoch 09770: saving model to ./model/
       model_Epoch9770_val_mean_absolute_error3.614.h5
11091 epoch_end_callback epoch 9769 lr 3.90625e-06
11092 Epoch 9771/10000
11093  - 0s - loss: 1.2449e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1773 - val_mean_absolute_error: 3.6140
11094 epoch_end_callback epoch 9770 lr 3.90625e-06
11095 Epoch 9772/10000
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11096   - 0s - loss: 1.2063e-04 - mean_absolute_error: 0.0028 -
        val_loss: 32.1755 - val_mean_absolute_error: 3.6135
11097   epoch_end_callback epoch 9771 lr 3.90625e-06
11098   Epoch 9773/10000
11099   - 0s - loss: 1.2385e-04 - mean_absolute_error: 0.0024 -
        val_loss: 32.1724 - val_mean_absolute_error: 3.6138
11100   epoch_end_callback epoch 9772 lr 3.90625e-06
11101   Epoch 9774/10000
11102   - 0s - loss: 1.2489e-04 - mean_absolute_error: 0.0026 -
        val_loss: 32.1758 - val_mean_absolute_error: 3.6137
11103   epoch_end_callback epoch 9773 lr 3.90625e-06
11104   Epoch 9775/10000
11105   - 0s - loss: 1.1976e-04 - mean_absolute_error: 0.0025 -
        val_loss: 32.1752 - val_mean_absolute_error: 3.6137
11106   epoch_end_callback epoch 9774 lr 3.90625e-06
11107   Epoch 9776/10000
11108   - 0s - loss: 1.2125e-04 - mean_absolute_error: 0.0027 -
        val_loss: 32.1744 - val_mean_absolute_error: 3.6137
11109   epoch_end_callback epoch 9775 lr 3.90625e-06
11110   Epoch 9777/10000
11111   - 0s - loss: 1.1420e-04 - mean_absolute_error: 0.0026 -
        val_loss: 32.1731 - val_mean_absolute_error: 3.6138
11112   epoch_end_callback epoch 9776 lr 3.90625e-06
11113   Epoch 9778/10000
11114   - 0s - loss: 1.2136e-04 - mean_absolute_error: 0.0026 -
        val_loss: 32.1756 - val_mean_absolute_error: 3.6138
11115   epoch_end_callback epoch 9777 lr 3.90625e-06
11116   Epoch 9779/10000
11117   - 0s - loss: 1.1699e-04 - mean_absolute_error: 0.0026 -
        val_loss: 32.1809 - val_mean_absolute_error: 3.6141
11118   epoch_end_callback epoch 9778 lr 3.90625e-06
11119   Epoch 9780/10000
11120   - 0s - loss: 1.1924e-04 - mean_absolute_error: 0.0027 -
        val_loss: 32.1918 - val_mean_absolute_error: 3.6143
11121
11122   Epoch 09780: saving model to ./model/
        model_Epoch9780_val_mean_absolute_error3.614.h5
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11123  epoch_end_callback epoch 9779 lr 3.90625e-06
11124  Epoch 9781/10000
11125   - 0s - loss: 1.1553e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1759 - val_mean_absolute_error: 3.6137
11126  epoch_end_callback epoch 9780 lr 3.90625e-06
11127  Epoch 9782/10000
11128   - 0s - loss: 1.1722e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1755 - val_mean_absolute_error: 3.6132
11129  epoch_end_callback epoch 9781 lr 3.90625e-06
11130  Epoch 9783/10000
11131   - 0s - loss: 1.2198e-04 - mean_absolute_error: 0.0025 -
       val_loss: 32.1819 - val_mean_absolute_error: 3.6140
11132  epoch_end_callback epoch 9782 lr 3.90625e-06
11133  Epoch 9784/10000
11134   - 0s - loss: 1.2470e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1810 - val_mean_absolute_error: 3.6141
11135  epoch_end_callback epoch 9783 lr 3.90625e-06
11136  Epoch 9785/10000
11137   - 0s - loss: 1.1873e-04 - mean_absolute_error: 0.0025 -
       val_loss: 32.1783 - val_mean_absolute_error: 3.6141
11138  epoch_end_callback epoch 9784 lr 3.90625e-06
11139  Epoch 9786/10000
11140   - 0s - loss: 1.2360e-04 - mean_absolute_error: 0.0030 -
       val_loss: 32.1777 - val_mean_absolute_error: 3.6136
11141  epoch_end_callback epoch 9785 lr 3.90625e-06
11142  Epoch 9787/10000
11143   - 0s - loss: 1.1693e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1799 - val_mean_absolute_error: 3.6140
11144  epoch_end_callback epoch 9786 lr 3.90625e-06
11145  Epoch 9788/10000
11146   - 0s - loss: 1.2245e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1776 - val_mean_absolute_error: 3.6141
11147  epoch_end_callback epoch 9787 lr 3.90625e-06
11148  Epoch 9789/10000
11149   - 0s - loss: 1.2049e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1794 - val_mean_absolute_error: 3.6140
11150  epoch_end_callback epoch 9788 lr 3.90625e-06
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11151  Epoch 9790/10000
11152   - 0s - loss: 1.1921e-04 - mean_absolute_error: 0.0025 -
        val_loss: 32.1781 - val_mean_absolute_error: 3.6138
11153
11154  Epoch 09790: saving model to ./model/
        model_Epoch9790_val_mean_absolute_error3.614.h5
11155  epoch_end_callback epoch 9789 lr 3.90625e-06
11156  Epoch 9791/10000
11157   - 0s - loss: 1.1941e-04 - mean_absolute_error: 0.0028 -
        val_loss: 32.1713 - val_mean_absolute_error: 3.6139
11158  epoch_end_callback epoch 9790 lr 3.90625e-06
11159  Epoch 9792/10000
11160   - 0s - loss: 1.1930e-04 - mean_absolute_error: 0.0028 -
        val_loss: 32.1754 - val_mean_absolute_error: 3.6138
11161  epoch_end_callback epoch 9791 lr 3.90625e-06
11162  Epoch 9793/10000
11163   - 0s - loss: 1.0767e-04 - mean_absolute_error: 0.0024 -
        val_loss: 32.1731 - val_mean_absolute_error: 3.6137
11164  epoch_end_callback epoch 9792 lr 3.90625e-06
11165  Epoch 9794/10000
11166   - 0s - loss: 1.2320e-04 - mean_absolute_error: 0.0029 -
        val_loss: 32.1795 - val_mean_absolute_error: 3.6138
11167  epoch_end_callback epoch 9793 lr 3.90625e-06
11168  Epoch 9795/10000
11169   - 0s - loss: 1.2352e-04 - mean_absolute_error: 0.0027 -
        val_loss: 32.1807 - val_mean_absolute_error: 3.6138
11170  epoch_end_callback epoch 9794 lr 3.90625e-06
11171  Epoch 9796/10000
11172   - 0s - loss: 1.2358e-04 - mean_absolute_error: 0.0024 -
        val_loss: 32.1786 - val_mean_absolute_error: 3.6139
11173  epoch_end_callback epoch 9795 lr 3.90625e-06
11174  Epoch 9797/10000
11175   - 0s - loss: 1.1714e-04 - mean_absolute_error: 0.0026 -
        val_loss: 32.1768 - val_mean_absolute_error: 3.6137
11176  epoch_end_callback epoch 9796 lr 3.90625e-06
11177  Epoch 9798/10000
11178   - 0s - loss: 1.1710e-04 - mean_absolute_error: 0.0029 -
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11178  val_loss: 32.1853 - val_mean_absolute_error: 3.6141
11179  epoch_end_callback epoch 9797 lr 3.90625e-06
11180  Epoch 9799/10000
11181   - 0s - loss: 1.2078e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1738 - val_mean_absolute_error: 3.6135
11182  epoch_end_callback epoch 9798 lr 3.90625e-06
11183  Epoch 9800/10000
11184   - 0s - loss: 1.1876e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1759 - val_mean_absolute_error: 3.6135
11185
11186  Epoch 09800: saving model to ./model/
       model_Epoch9800_val_mean_absolute_error3.614.h5
11187  epoch_end_callback epoch 9799 lr 3.90625e-06
11188  Epoch 9801/10000
11189   - 0s - loss: 1.2109e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1755 - val_mean_absolute_error: 3.6138
11190  epoch_end_callback epoch 9800 lr 3.90625e-06
11191  Epoch 9802/10000
11192   - 0s - loss: 1.1618e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1777 - val_mean_absolute_error: 3.6140
11193  epoch_end_callback epoch 9801 lr 3.90625e-06
11194  Epoch 9803/10000
11195   - 0s - loss: 1.2024e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1785 - val_mean_absolute_error: 3.6140
11196  epoch_end_callback epoch 9802 lr 3.90625e-06
11197  Epoch 9804/10000
11198   - 0s - loss: 1.1903e-04 - mean_absolute_error: 0.0025 -
       val_loss: 32.1853 - val_mean_absolute_error: 3.6142
11199  epoch_end_callback epoch 9803 lr 3.90625e-06
11200  Epoch 9805/10000
11201   - 0s - loss: 1.2187e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1781 - val_mean_absolute_error: 3.6139
11202  epoch_end_callback epoch 9804 lr 3.90625e-06
11203  Epoch 9806/10000
11204   - 0s - loss: 1.0692e-04 - mean_absolute_error: 0.0022 -
       val_loss: 32.1756 - val_mean_absolute_error: 3.6135
11205  epoch_end_callback epoch 9805 lr 3.90625e-06
```

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11206 Epoch 9807/10000
11207  - 0s - loss: 1.2456e-04 - mean_absolute_error: 0.0030 -
       val_loss: 32.1782 - val_mean_absolute_error: 3.6139
11208 epoch_end_callback epoch 9806 lr 3.90625e-06
11209 Epoch 9808/10000
11210  - 0s - loss: 1.1895e-04 - mean_absolute_error: 0.0025 -
       val_loss: 32.1753 - val_mean_absolute_error: 3.6136
11211 epoch_end_callback epoch 9807 lr 3.90625e-06
11212 Epoch 9809/10000
11213  - 0s - loss: 1.2250e-04 - mean_absolute_error: 0.0029 -
       val_loss: 32.1738 - val_mean_absolute_error: 3.6135
11214 epoch_end_callback epoch 9808 lr 3.90625e-06
11215 Epoch 9810/10000
11216  - 0s - loss: 1.2044e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1790 - val_mean_absolute_error: 3.6139
11217
11218 Epoch 09810: saving model to ./model/
       model_Epoch9810_val_mean_absolute_error3.614.h5
11219 epoch_end_callback epoch 9809 lr 3.90625e-06
11220 Epoch 9811/10000
11221  - 0s - loss: 1.1742e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1789 - val_mean_absolute_error: 3.6140
11222 epoch_end_callback epoch 9810 lr 3.90625e-06
11223 Epoch 9812/10000
11224  - 0s - loss: 1.2153e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1761 - val_mean_absolute_error: 3.6138
11225 epoch_end_callback epoch 9811 lr 3.90625e-06
11226 Epoch 9813/10000
11227  - 0s - loss: 1.1686e-04 - mean_absolute_error: 0.0025 -
       val_loss: 32.1746 - val_mean_absolute_error: 3.6139
11228 epoch_end_callback epoch 9812 lr 3.90625e-06
11229 Epoch 9814/10000
11230  - 0s - loss: 1.1958e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1767 - val_mean_absolute_error: 3.6138
11231 epoch_end_callback epoch 9813 lr 3.90625e-06
11232 Epoch 9815/10000
11233  - 0s - loss: 1.1980e-04 - mean_absolute_error: 0.0028 -
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11233  val_loss: 32.1798 - val_mean_absolute_error: 3.6139
11234  epoch_end_callback epoch 9814 lr 3.90625e-06
11235  Epoch 9816/10000
11236   - 0s - loss: 1.1775e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1728 - val_mean_absolute_error: 3.6135
11237  epoch_end_callback epoch 9815 lr 3.90625e-06
11238  Epoch 9817/10000
11239   - 0s - loss: 1.2108e-04 - mean_absolute_error: 0.0025 -
       val_loss: 32.1713 - val_mean_absolute_error: 3.6135
11240  epoch_end_callback epoch 9816 lr 3.90625e-06
11241  Epoch 9818/10000
11242   - 0s - loss: 1.1474e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1749 - val_mean_absolute_error: 3.6135
11243  epoch_end_callback epoch 9817 lr 3.90625e-06
11244  Epoch 9819/10000
11245   - 0s - loss: 1.2031e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1723 - val_mean_absolute_error: 3.6137
11246  epoch_end_callback epoch 9818 lr 3.90625e-06
11247  Epoch 9820/10000
11248   - 0s - loss: 1.1838e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1805 - val_mean_absolute_error: 3.6143
11249
11250  Epoch 09820: saving model to ./model/
       model_Epoch9820_val_mean_absolute_error3.614.h5
11251  epoch_end_callback epoch 9819 lr 3.90625e-06
11252  Epoch 9821/10000
11253   - 0s - loss: 1.0838e-04 - mean_absolute_error: 0.0024 -
       val_loss: 32.1752 - val_mean_absolute_error: 3.6142
11254  epoch_end_callback epoch 9820 lr 3.90625e-06
11255  Epoch 9822/10000
11256   - 0s - loss: 1.2222e-04 - mean_absolute_error: 0.0029 -
       val_loss: 32.1810 - val_mean_absolute_error: 3.6141
11257  epoch_end_callback epoch 9821 lr 3.90625e-06
11258  Epoch 9823/10000
11259   - 0s - loss: 1.2058e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1739 - val_mean_absolute_error: 3.6140
11260  epoch_end_callback epoch 9822 lr 3.90625e-06
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11261  Epoch 9824/10000
11262   - 0s - loss: 1.1683e-04 - mean_absolute_error: 0.0028 -
        val_loss: 32.1749 - val_mean_absolute_error: 3.6133
11263  epoch_end_callback epoch 9823 lr 3.90625e-06
11264  Epoch 9825/10000
11265   - 0s - loss: 1.2068e-04 - mean_absolute_error: 0.0027 -
        val_loss: 32.1748 - val_mean_absolute_error: 3.6137
11266  epoch_end_callback epoch 9824 lr 3.90625e-06
11267  Epoch 9826/10000
11268   - 0s - loss: 1.1681e-04 - mean_absolute_error: 0.0027 -
        val_loss: 32.1768 - val_mean_absolute_error: 3.6139
11269  epoch_end_callback epoch 9825 lr 3.90625e-06
11270  Epoch 9827/10000
11271   - 0s - loss: 1.2216e-04 - mean_absolute_error: 0.0027 -
        val_loss: 32.1786 - val_mean_absolute_error: 3.6140
11272  epoch_end_callback epoch 9826 lr 3.90625e-06
11273  Epoch 9828/10000
11274   - 0s - loss: 1.1304e-04 - mean_absolute_error: 0.0026 -
        val_loss: 32.1777 - val_mean_absolute_error: 3.6138
11275  epoch_end_callback epoch 9827 lr 3.90625e-06
11276  Epoch 9829/10000
11277   - 0s - loss: 1.1744e-04 - mean_absolute_error: 0.0027 -
        val_loss: 32.1760 - val_mean_absolute_error: 3.6139
11278  epoch_end_callback epoch 9828 lr 3.90625e-06
11279  Epoch 9830/10000
11280   - 0s - loss: 1.1622e-04 - mean_absolute_error: 0.0025 -
        val_loss: 32.1792 - val_mean_absolute_error: 3.6140
11281
11282  Epoch 09830: saving model to ./model/
        model_Epoch9830_val_mean_absolute_error3.614.h5
11283  epoch_end_callback epoch 9829 lr 3.90625e-06
11284  Epoch 9831/10000
11285   - 0s - loss: 1.2336e-04 - mean_absolute_error: 0.0027 -
        val_loss: 32.1790 - val_mean_absolute_error: 3.6140
11286  epoch_end_callback epoch 9830 lr 3.90625e-06
11287  Epoch 9832/10000
11288   - 0s - loss: 1.0634e-04 - mean_absolute_error: 0.0021 -
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11288  val_loss: 32.1775 - val_mean_absolute_error: 3.6140
11289  epoch_end_callback epoch 9831 lr 3.90625e-06
11290  Epoch 9833/10000
11291   - 0s - loss: 1.2349e-04 - mean_absolute_error: 0.0030 -
       val_loss: 32.1777 - val_mean_absolute_error: 3.6141
11292  epoch_end_callback epoch 9832 lr 3.90625e-06
11293  Epoch 9834/10000
11294   - 0s - loss: 1.1740e-04 - mean_absolute_error: 0.0024 -
       val_loss: 32.1731 - val_mean_absolute_error: 3.6137
11295  epoch_end_callback epoch 9833 lr 3.90625e-06
11296  Epoch 9835/10000
11297   - 0s - loss: 1.0968e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1768 - val_mean_absolute_error: 3.6141
11298  epoch_end_callback epoch 9834 lr 3.90625e-06
11299  Epoch 9836/10000
11300   - 0s - loss: 1.0836e-04 - mean_absolute_error: 0.0025 -
       val_loss: 32.1725 - val_mean_absolute_error: 3.6138
11301  epoch_end_callback epoch 9835 lr 3.90625e-06
11302  Epoch 9837/10000
11303   - 0s - loss: 1.2384e-04 - mean_absolute_error: 0.0029 -
       val_loss: 32.1759 - val_mean_absolute_error: 3.6138
11304  epoch_end_callback epoch 9836 lr 3.90625e-06
11305  Epoch 9838/10000
11306   - 0s - loss: 1.2126e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1748 - val_mean_absolute_error: 3.6136
11307  epoch_end_callback epoch 9837 lr 3.90625e-06
11308  Epoch 9839/10000
11309   - 0s - loss: 1.2138e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1753 - val_mean_absolute_error: 3.6141
11310  epoch_end_callback epoch 9838 lr 3.90625e-06
11311  Epoch 9840/10000
11312   - 0s - loss: 1.1913e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1762 - val_mean_absolute_error: 3.6136
11313
11314  Epoch 09840: saving model to ./model/
       model_Epoch9840_val_mean_absolute_error3.614.h5
11315  epoch_end_callback epoch 9839 lr 3.90625e-06
```

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11316  Epoch 9841/10000
11317   - 0s - loss: 1.1745e-04 - mean_absolute_error: 0.0027 - val_loss: 32.1757 - val_mean_absolute_error: 3.6139
11318  epoch_end_callback epoch 9840 lr 3.90625e-06
11319  Epoch 9842/10000
11320   - 0s - loss: 1.1995e-04 - mean_absolute_error: 0.0026 - val_loss: 32.1765 - val_mean_absolute_error: 3.6141
11321  epoch_end_callback epoch 9841 lr 3.90625e-06
11322  Epoch 9843/10000
11323   - 0s - loss: 1.1742e-04 - mean_absolute_error: 0.0026 - val_loss: 32.1763 - val_mean_absolute_error: 3.6140
11324  epoch_end_callback epoch 9842 lr 3.90625e-06
11325  Epoch 9844/10000
11326   - 0s - loss: 1.2102e-04 - mean_absolute_error: 0.0026 - val_loss: 32.1697 - val_mean_absolute_error: 3.6139
11327  epoch_end_callback epoch 9843 lr 3.90625e-06
11328  Epoch 9845/10000
11329   - 0s - loss: 1.1778e-04 - mean_absolute_error: 0.0025 - val_loss: 32.1770 - val_mean_absolute_error: 3.6140
11330  epoch_end_callback epoch 9844 lr 3.90625e-06
11331  Epoch 9846/10000
11332   - 0s - loss: 1.1894e-04 - mean_absolute_error: 0.0027 - val_loss: 32.1785 - val_mean_absolute_error: 3.6137
11333  epoch_end_callback epoch 9845 lr 3.90625e-06
11334  Epoch 9847/10000
11335   - 0s - loss: 1.2012e-04 - mean_absolute_error: 0.0026 - val_loss: 32.1789 - val_mean_absolute_error: 3.6138
11336  epoch_end_callback epoch 9846 lr 3.90625e-06
11337  Epoch 9848/10000
11338   - 0s - loss: 1.2250e-04 - mean_absolute_error: 0.0028 - val_loss: 32.1759 - val_mean_absolute_error: 3.6139
11339  epoch_end_callback epoch 9847 lr 3.90625e-06
11340  Epoch 9849/10000
11341   - 0s - loss: 1.2091e-04 - mean_absolute_error: 0.0027 - val_loss: 32.1816 - val_mean_absolute_error: 3.6140
11342  epoch_end_callback epoch 9848 lr 3.90625e-06
11343  Epoch 9850/10000
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11344    - 0s - loss: 1.1970e-04 - mean_absolute_error: 0.0027 -
         val_loss: 32.1758 - val_mean_absolute_error: 3.6137

11345

11346  Epoch 09850: saving model to ./model/
       model_Epoch9850_val_mean_absolute_error3.614.h5
11347  epoch_end_callback epoch 9849 lr 3.90625e-06
11348  Epoch 9851/10000
11349    - 0s - loss: 1.1575e-04 - mean_absolute_error: 0.0025 -
         val_loss: 32.1759 - val_mean_absolute_error: 3.6136
11350  epoch_end_callback epoch 9850 lr 3.90625e-06
11351  Epoch 9852/10000
11352    - 0s - loss: 1.1653e-04 - mean_absolute_error: 0.0027 -
         val_loss: 32.1734 - val_mean_absolute_error: 3.6137
11353  epoch_end_callback epoch 9851 lr 3.90625e-06
11354  Epoch 9853/10000
11355    - 0s - loss: 1.1359e-04 - mean_absolute_error: 0.0023 -
         val_loss: 32.1820 - val_mean_absolute_error: 3.6137
11356  epoch_end_callback epoch 9852 lr 3.90625e-06
11357  Epoch 9854/10000
11358    - 0s - loss: 1.2382e-04 - mean_absolute_error: 0.0028 -
         val_loss: 32.1841 - val_mean_absolute_error: 3.6141
11359  epoch_end_callback epoch 9853 lr 3.90625e-06
11360  Epoch 9855/10000
11361    - 0s - loss: 1.1021e-04 - mean_absolute_error: 0.0022 -
         val_loss: 32.1805 - val_mean_absolute_error: 3.6140
11362  epoch_end_callback epoch 9854 lr 3.90625e-06
11363  Epoch 9856/10000
11364    - 0s - loss: 1.1672e-04 - mean_absolute_error: 0.0025 -
         val_loss: 32.1786 - val_mean_absolute_error: 3.6141
11365  epoch_end_callback epoch 9855 lr 3.90625e-06
11366  Epoch 9857/10000
11367    - 0s - loss: 1.1896e-04 - mean_absolute_error: 0.0026 -
         val_loss: 32.1818 - val_mean_absolute_error: 3.6138
11368  epoch_end_callback epoch 9856 lr 3.90625e-06
11369  Epoch 9858/10000
11370    - 0s - loss: 1.1965e-04 - mean_absolute_error: 0.0027 -
         val_loss: 32.1807 - val_mean_absolute_error: 3.6140
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11371 epoch_end_callback epoch 9857 lr 3.90625e-06
11372 Epoch 9859/10000
11373  - 0s - loss: 1.2004e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1782 - val_mean_absolute_error: 3.6140
11374 epoch_end_callback epoch 9858 lr 3.90625e-06
11375 Epoch 9860/10000
11376  - 0s - loss: 1.1610e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1776 - val_mean_absolute_error: 3.6142
11377
11378 Epoch 09860: saving model to ./model/
       model_Epoch9860_val_mean_absolute_error3.614.h5
11379 epoch_end_callback epoch 9859 lr 3.90625e-06
11380 Epoch 9861/10000
11381  - 0s - loss: 1.0771e-04 - mean_absolute_error: 0.0024 -
       val_loss: 32.1784 - val_mean_absolute_error: 3.6141
11382 epoch_end_callback epoch 9860 lr 3.90625e-06
11383 Epoch 9862/10000
11384  - 0s - loss: 1.1902e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1792 - val_mean_absolute_error: 3.6138
11385 epoch_end_callback epoch 9861 lr 3.90625e-06
11386 Epoch 9863/10000
11387  - 0s - loss: 1.1889e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1781 - val_mean_absolute_error: 3.6138
11388 epoch_end_callback epoch 9862 lr 3.90625e-06
11389 Epoch 9864/10000
11390  - 0s - loss: 1.2020e-04 - mean_absolute_error: 0.0025 -
       val_loss: 32.1808 - val_mean_absolute_error: 3.6142
11391 epoch_end_callback epoch 9863 lr 3.90625e-06
11392 Epoch 9865/10000
11393  - 0s - loss: 1.1915e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1779 - val_mean_absolute_error: 3.6141
11394 epoch_end_callback epoch 9864 lr 3.90625e-06
11395 Epoch 9866/10000
11396  - 0s - loss: 1.0626e-04 - mean_absolute_error: 0.0023 -
       val_loss: 32.1752 - val_mean_absolute_error: 3.6137
11397 epoch_end_callback epoch 9865 lr 3.90625e-06
11398 Epoch 9867/10000
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11399   - 0s - loss: 1.2587e-04 - mean_absolute_error: 0.0027 - val_loss: 32.1711 - val_mean_absolute_error: 3.6138

11400 epoch_end_callback epoch 9866 lr 3.90625e-06

11401 Epoch 9868/10000

11402   - 0s - loss: 1.2283e-04 - mean_absolute_error: 0.0027 - val_loss: 32.1778 - val_mean_absolute_error: 3.6140

11403 epoch_end_callback epoch 9867 lr 3.90625e-06

11404 Epoch 9869/10000

11405   - 0s - loss: 1.1882e-04 - mean_absolute_error: 0.0026 - val_loss: 32.1707 - val_mean_absolute_error: 3.6130

11406 epoch_end_callback epoch 9868 lr 3.90625e-06

11407 Epoch 9870/10000

11408   - 0s - loss: 1.1266e-04 - mean_absolute_error: 0.0026 - val_loss: 32.1759 - val_mean_absolute_error: 3.6142

11409

11410 Epoch 09870: saving model to ./model/model_Epoch9870_val_mean_absolute_error3.614.h5

11411 epoch_end_callback epoch 9869 lr 3.90625e-06

11412 Epoch 9871/10000

11413   - 0s - loss: 1.1675e-04 - mean_absolute_error: 0.0026 - val_loss: 32.1785 - val_mean_absolute_error: 3.6141

11414 epoch_end_callback epoch 9870 lr 3.90625e-06

11415 Epoch 9872/10000

11416   - 0s - loss: 1.2099e-04 - mean_absolute_error: 0.0028 - val_loss: 32.1801 - val_mean_absolute_error: 3.6138

11417 epoch_end_callback epoch 9871 lr 3.90625e-06

11418 Epoch 9873/10000

11419   - 0s - loss: 1.1882e-04 - mean_absolute_error: 0.0025 - val_loss: 32.1814 - val_mean_absolute_error: 3.6142

11420 epoch_end_callback epoch 9872 lr 3.90625e-06

11421 Epoch 9874/10000

11422   - 0s - loss: 1.1916e-04 - mean_absolute_error: 0.0028 - val_loss: 32.1796 - val_mean_absolute_error: 3.6139

11423 epoch_end_callback epoch 9873 lr 3.90625e-06

11424 Epoch 9875/10000

11425   - 0s - loss: 1.0542e-04 - mean_absolute_error: 0.0025 - val_loss: 32.1807 - val_mean_absolute_error: 3.6143

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11426  epoch_end_callback epoch 9874 lr 3.90625e-06
11427  Epoch 9876/10000
11428   - 0s - loss: 1.1953e-04 - mean_absolute_error: 0.0028 - val_loss: 32.1737 - val_mean_absolute_error: 3.6140
11429  epoch_end_callback epoch 9875 lr 3.90625e-06
11430  Epoch 9877/10000
11431   - 0s - loss: 1.1986e-04 - mean_absolute_error: 0.0028 - val_loss: 32.1807 - val_mean_absolute_error: 3.6143
11432  epoch_end_callback epoch 9876 lr 3.90625e-06
11433  Epoch 9878/10000
11434   - 0s - loss: 1.1585e-04 - mean_absolute_error: 0.0029 - val_loss: 32.1738 - val_mean_absolute_error: 3.6138
11435  epoch_end_callback epoch 9877 lr 3.90625e-06
11436  Epoch 9879/10000
11437   - 0s - loss: 1.1990e-04 - mean_absolute_error: 0.0028 - val_loss: 32.1796 - val_mean_absolute_error: 3.6141
11438  epoch_end_callback epoch 9878 lr 3.90625e-06
11439  Epoch 9880/10000
11440   - 0s - loss: 1.1931e-04 - mean_absolute_error: 0.0024 - val_loss: 32.1844 - val_mean_absolute_error: 3.6139
11441
11442  Epoch 09880: saving model to ./model/model_Epoch9880_val_mean_absolute_error3.614.h5
11443  epoch_end_callback epoch 9879 lr 3.90625e-06
11444  Epoch 9881/10000
11445   - 0s - loss: 1.1775e-04 - mean_absolute_error: 0.0026 - val_loss: 32.1794 - val_mean_absolute_error: 3.6139
11446  epoch_end_callback epoch 9880 lr 3.90625e-06
11447  Epoch 9882/10000
11448   - 0s - loss: 1.2033e-04 - mean_absolute_error: 0.0027 - val_loss: 32.1794 - val_mean_absolute_error: 3.6138
11449  epoch_end_callback epoch 9881 lr 3.90625e-06
11450  Epoch 9883/10000
11451   - 0s - loss: 1.1923e-04 - mean_absolute_error: 0.0025 - val_loss: 32.1776 - val_mean_absolute_error: 3.6139
11452  epoch_end_callback epoch 9882 lr 3.90625e-06
11453  Epoch 9884/10000
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11454    - 0s - loss: 1.1575e-04 - mean_absolute_error: 0.0026 -
         val_loss: 32.1774 - val_mean_absolute_error: 3.6138
11455  epoch_end_callback epoch 9883 lr 3.90625e-06
11456  Epoch 9885/10000
11457    - 0s - loss: 1.1591e-04 - mean_absolute_error: 0.0028 -
         val_loss: 32.1802 - val_mean_absolute_error: 3.6143
11458  epoch_end_callback epoch 9884 lr 3.90625e-06
11459  Epoch 9886/10000
11460    - 0s - loss: 1.1951e-04 - mean_absolute_error: 0.0026 -
         val_loss: 32.1762 - val_mean_absolute_error: 3.6138
11461  epoch_end_callback epoch 9885 lr 3.90625e-06
11462  Epoch 9887/10000
11463    - 0s - loss: 1.1892e-04 - mean_absolute_error: 0.0025 -
         val_loss: 32.1780 - val_mean_absolute_error: 3.6139
11464  epoch_end_callback epoch 9886 lr 3.90625e-06
11465  Epoch 9888/10000
11466    - 0s - loss: 1.2259e-04 - mean_absolute_error: 0.0029 -
         val_loss: 32.1770 - val_mean_absolute_error: 3.6139
11467  epoch_end_callback epoch 9887 lr 3.90625e-06
11468  Epoch 9889/10000
11469    - 0s - loss: 1.1311e-04 - mean_absolute_error: 0.0025 -
         val_loss: 32.1841 - val_mean_absolute_error: 3.6139
11470  epoch_end_callback epoch 9888 lr 3.90625e-06
11471  Epoch 9890/10000
11472    - 0s - loss: 1.1784e-04 - mean_absolute_error: 0.0029 -
         val_loss: 32.1753 - val_mean_absolute_error: 3.6136
11473
11474  Epoch 09890: saving model to ./model/
         model_Epoch9890_val_mean_absolute_error3.614.h5
11475  epoch_end_callback epoch 9889 lr 3.90625e-06
11476  Epoch 9891/10000
11477    - 0s - loss: 1.1442e-04 - mean_absolute_error: 0.0025 -
         val_loss: 32.1782 - val_mean_absolute_error: 3.6138
11478  epoch_end_callback epoch 9890 lr 3.90625e-06
11479  Epoch 9892/10000
11480    - 0s - loss: 1.2006e-04 - mean_absolute_error: 0.0028 -
         val_loss: 32.1752 - val_mean_absolute_error: 3.6139
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11481  epoch_end_callback epoch 9891 lr 3.90625e-06
11482  Epoch 9893/10000
11483   - 0s - loss: 1.1419e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1777 - val_mean_absolute_error: 3.6135
11484  epoch_end_callback epoch 9892 lr 3.90625e-06
11485  Epoch 9894/10000
11486   - 0s - loss: 1.1750e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1749 - val_mean_absolute_error: 3.6137
11487  epoch_end_callback epoch 9893 lr 3.90625e-06
11488  Epoch 9895/10000
11489   - 0s - loss: 1.1824e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1762 - val_mean_absolute_error: 3.6138
11490  epoch_end_callback epoch 9894 lr 3.90625e-06
11491  Epoch 9896/10000
11492   - 0s - loss: 1.1220e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1766 - val_mean_absolute_error: 3.6139
11493  epoch_end_callback epoch 9895 lr 3.90625e-06
11494  Epoch 9897/10000
11495   - 0s - loss: 1.1831e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1790 - val_mean_absolute_error: 3.6140
11496  epoch_end_callback epoch 9896 lr 3.90625e-06
11497  Epoch 9898/10000
11498   - 0s - loss: 1.1789e-04 - mean_absolute_error: 0.0024 -
       val_loss: 32.1750 - val_mean_absolute_error: 3.6140
11499  epoch_end_callback epoch 9897 lr 3.90625e-06
11500  Epoch 9899/10000
11501   - 0s - loss: 1.1908e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1773 - val_mean_absolute_error: 3.6137
11502  epoch_end_callback epoch 9898 lr 3.90625e-06
11503  Epoch 9900/10000
11504   - 0s - loss: 1.2279e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1759 - val_mean_absolute_error: 3.6139
11505
11506  Epoch 09900: saving model to ./model/
       model_Epoch9900_val_mean_absolute_error3.614.h5
11507  epoch_end_callback epoch 9899 lr 3.90625e-06
11508  Epoch 9901/10000
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11509    - 0s - loss: 1.1672e-04 - mean_absolute_error: 0.0024 -
        val_loss: 32.1776 - val_mean_absolute_error: 3.6139
11510  epoch_end_callback epoch 9900 lr 3.90625e-06
11511  Epoch 9902/10000
11512    - 0s - loss: 1.1600e-04 - mean_absolute_error: 0.0027 -
        val_loss: 32.1757 - val_mean_absolute_error: 3.6139
11513  epoch_end_callback epoch 9901 lr 3.90625e-06
11514  Epoch 9903/10000
11515    - 0s - loss: 1.1910e-04 - mean_absolute_error: 0.0026 -
        val_loss: 32.1755 - val_mean_absolute_error: 3.6138
11516  epoch_end_callback epoch 9902 lr 3.90625e-06
11517  Epoch 9904/10000
11518    - 0s - loss: 1.1836e-04 - mean_absolute_error: 0.0027 -
        val_loss: 32.1772 - val_mean_absolute_error: 3.6140
11519  epoch_end_callback epoch 9903 lr 3.90625e-06
11520  Epoch 9905/10000
11521    - 0s - loss: 1.1454e-04 - mean_absolute_error: 0.0024 -
        val_loss: 32.1697 - val_mean_absolute_error: 3.6141
11522  epoch_end_callback epoch 9904 lr 3.90625e-06
11523  Epoch 9906/10000
11524    - 0s - loss: 1.1908e-04 - mean_absolute_error: 0.0028 -
        val_loss: 32.1761 - val_mean_absolute_error: 3.6139
11525  epoch_end_callback epoch 9905 lr 3.90625e-06
11526  Epoch 9907/10000
11527    - 0s - loss: 1.1636e-04 - mean_absolute_error: 0.0027 -
        val_loss: 32.1785 - val_mean_absolute_error: 3.6139
11528  epoch_end_callback epoch 9906 lr 3.90625e-06
11529  Epoch 9908/10000
11530    - 0s - loss: 1.1672e-04 - mean_absolute_error: 0.0026 -
        val_loss: 32.1771 - val_mean_absolute_error: 3.6139
11531  epoch_end_callback epoch 9907 lr 3.90625e-06
11532  Epoch 9909/10000
11533    - 0s - loss: 1.2194e-04 - mean_absolute_error: 0.0025 -
        val_loss: 32.1783 - val_mean_absolute_error: 3.6139
11534  epoch_end_callback epoch 9908 lr 3.90625e-06
11535  Epoch 9910/10000
11536    - 0s - loss: 1.1703e-04 - mean_absolute_error: 0.0027 -
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11536  val_loss: 32.1794 - val_mean_absolute_error: 3.6140
11537
11538  Epoch 09910: saving model to ./model/
       model_Epoch9910_val_mean_absolute_error3.614.h5
11539  epoch_end_callback epoch 9909 lr 3.90625e-06
11540  Epoch 9911/10000
11541   - 0s - loss: 1.1622e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1805 - val_mean_absolute_error: 3.6140
11542  epoch_end_callback epoch 9910 lr 3.90625e-06
11543  Epoch 9912/10000
11544   - 0s - loss: 1.1823e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1870 - val_mean_absolute_error: 3.6141
11545  epoch_end_callback epoch 9911 lr 3.90625e-06
11546  Epoch 9913/10000
11547   - 0s - loss: 1.1886e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1794 - val_mean_absolute_error: 3.6141
11548  epoch_end_callback epoch 9912 lr 3.90625e-06
11549  Epoch 9914/10000
11550   - 0s - loss: 1.1884e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1801 - val_mean_absolute_error: 3.6141
11551  epoch_end_callback epoch 9913 lr 3.90625e-06
11552  Epoch 9915/10000
11553   - 0s - loss: 1.1453e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1786 - val_mean_absolute_error: 3.6140
11554  epoch_end_callback epoch 9914 lr 3.90625e-06
11555  Epoch 9916/10000
11556   - 0s - loss: 1.1952e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1779 - val_mean_absolute_error: 3.6140
11557  epoch_end_callback epoch 9915 lr 3.90625e-06
11558  Epoch 9917/10000
11559   - 0s - loss: 1.1616e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1759 - val_mean_absolute_error: 3.6140
11560  epoch_end_callback epoch 9916 lr 3.90625e-06
11561  Epoch 9918/10000
11562   - 0s - loss: 1.1721e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1787 - val_mean_absolute_error: 3.6139
11563  epoch_end_callback epoch 9917 lr 3.90625e-06
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11564  Epoch 9919/10000
11565   - 0s - loss: 1.1827e-04 - mean_absolute_error: 0.0028 -
        val_loss: 32.1787 - val_mean_absolute_error: 3.6142
11566  epoch_end_callback epoch 9918 lr 3.90625e-06
11567  Epoch 9920/10000
11568   - 0s - loss: 1.1788e-04 - mean_absolute_error: 0.0026 -
        val_loss: 32.1807 - val_mean_absolute_error: 3.6141
11569
11570  Epoch 09920: saving model to ./model/
        model_Epoch9920_val_mean_absolute_error3.614.h5
11571  epoch_end_callback epoch 9919 lr 3.90625e-06
11572  Epoch 9921/10000
11573   - 0s - loss: 1.1436e-04 - mean_absolute_error: 0.0027 -
        val_loss: 32.1800 - val_mean_absolute_error: 3.6136
11574  epoch_end_callback epoch 9920 lr 3.90625e-06
11575  Epoch 9922/10000
11576   - 0s - loss: 1.2139e-04 - mean_absolute_error: 0.0028 -
        val_loss: 32.1812 - val_mean_absolute_error: 3.6142
11577  epoch_end_callback epoch 9921 lr 3.90625e-06
11578  Epoch 9923/10000
11579   - 0s - loss: 1.1674e-04 - mean_absolute_error: 0.0027 -
        val_loss: 32.1825 - val_mean_absolute_error: 3.6141
11580  epoch_end_callback epoch 9922 lr 3.90625e-06
11581  Epoch 9924/10000
11582   - 0s - loss: 1.1809e-04 - mean_absolute_error: 0.0026 -
        val_loss: 32.1792 - val_mean_absolute_error: 3.6143
11583  epoch_end_callback epoch 9923 lr 3.90625e-06
11584  Epoch 9925/10000
11585   - 0s - loss: 1.1907e-04 - mean_absolute_error: 0.0025 -
        val_loss: 32.1794 - val_mean_absolute_error: 3.6141
11586  epoch_end_callback epoch 9924 lr 3.90625e-06
11587  Epoch 9926/10000
11588   - 0s - loss: 1.1877e-04 - mean_absolute_error: 0.0029 -
        val_loss: 32.1796 - val_mean_absolute_error: 3.6143
11589  epoch_end_callback epoch 9925 lr 3.90625e-06
11590  Epoch 9927/10000
11591   - 0s - loss: 1.1425e-04 - mean_absolute_error: 0.0028 -
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11591  val_loss: 32.1812 - val_mean_absolute_error: 3.6144
11592  epoch_end_callback epoch 9926 lr 3.90625e-06
11593  Epoch 9928/10000
11594   - 0s - loss: 1.1985e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1848 - val_mean_absolute_error: 3.6141
11595  epoch_end_callback epoch 9927 lr 3.90625e-06
11596  Epoch 9929/10000
11597   - 0s - loss: 1.1395e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1897 - val_mean_absolute_error: 3.6141
11598  epoch_end_callback epoch 9928 lr 3.90625e-06
11599  Epoch 9930/10000
11600   - 0s - loss: 1.1417e-04 - mean_absolute_error: 0.0030 -
       val_loss: 32.1815 - val_mean_absolute_error: 3.6140
11601
11602  Epoch 09930: saving model to ./model/
       model_Epoch9930_val_mean_absolute_error3.614.h5
11603  epoch_end_callback epoch 9929 lr 3.90625e-06
11604  Epoch 9931/10000
11605   - 0s - loss: 1.0976e-04 - mean_absolute_error: 0.0025 -
       val_loss: 32.1907 - val_mean_absolute_error: 3.6142
11606  epoch_end_callback epoch 9930 lr 3.90625e-06
11607  Epoch 9932/10000
11608   - 0s - loss: 1.1125e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1817 - val_mean_absolute_error: 3.6144
11609  epoch_end_callback epoch 9931 lr 3.90625e-06
11610  Epoch 9933/10000
11611   - 0s - loss: 1.1761e-04 - mean_absolute_error: 0.0025 -
       val_loss: 32.1793 - val_mean_absolute_error: 3.6140
11612  epoch_end_callback epoch 9932 lr 3.90625e-06
11613  Epoch 9934/10000
11614   - 0s - loss: 1.1571e-04 - mean_absolute_error: 0.0024 -
       val_loss: 32.1798 - val_mean_absolute_error: 3.6141
11615  epoch_end_callback epoch 9933 lr 3.90625e-06
11616  Epoch 9935/10000
11617   - 0s - loss: 1.2096e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1823 - val_mean_absolute_error: 3.6141
11618  epoch_end_callback epoch 9934 lr 3.90625e-06
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11619  Epoch 9936/10000
11620   - 0s - loss: 1.2219e-04 - mean_absolute_error: 0.0028 -
        val_loss: 32.1688 - val_mean_absolute_error: 3.6136
11621  epoch_end_callback epoch 9935 lr 3.90625e-06
11622  Epoch 9937/10000
11623   - 0s - loss: 1.1559e-04 - mean_absolute_error: 0.0028 -
        val_loss: 32.1761 - val_mean_absolute_error: 3.6141
11624  epoch_end_callback epoch 9936 lr 3.90625e-06
11625  Epoch 9938/10000
11626   - 0s - loss: 1.1826e-04 - mean_absolute_error: 0.0027 -
        val_loss: 32.1779 - val_mean_absolute_error: 3.6141
11627  epoch_end_callback epoch 9937 lr 3.90625e-06
11628  Epoch 9939/10000
11629   - 0s - loss: 1.1766e-04 - mean_absolute_error: 0.0025 -
        val_loss: 32.1776 - val_mean_absolute_error: 3.6141
11630  epoch_end_callback epoch 9938 lr 3.90625e-06
11631  Epoch 9940/10000
11632   - 0s - loss: 1.1573e-04 - mean_absolute_error: 0.0027 -
        val_loss: 32.1788 - val_mean_absolute_error: 3.6142
11633
11634  Epoch 09940: saving model to ./model/
        model_Epoch9940_val_mean_absolute_error3.614.h5
11635  epoch_end_callback epoch 9939 lr 3.90625e-06
11636  Epoch 9941/10000
11637   - 0s - loss: 1.2133e-04 - mean_absolute_error: 0.0028 -
        val_loss: 32.1797 - val_mean_absolute_error: 3.6140
11638  epoch_end_callback epoch 9940 lr 3.90625e-06
11639  Epoch 9942/10000
11640   - 0s - loss: 1.1541e-04 - mean_absolute_error: 0.0027 -
        val_loss: 32.1768 - val_mean_absolute_error: 3.6142
11641  epoch_end_callback epoch 9941 lr 3.90625e-06
11642  Epoch 9943/10000
11643   - 0s - loss: 1.1964e-04 - mean_absolute_error: 0.0026 -
        val_loss: 32.1765 - val_mean_absolute_error: 3.6139
11644  epoch_end_callback epoch 9942 lr 3.90625e-06
11645  Epoch 9944/10000
11646   - 0s - loss: 1.1758e-04 - mean_absolute_error: 0.0026 -
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11646  val_loss: 32.1802 - val_mean_absolute_error: 3.6139
11647  epoch_end_callback epoch 9943 lr 3.90625e-06
11648  Epoch 9945/10000
11649   - 0s - loss: 1.2105e-04 - mean_absolute_error: 0.0029 - val_loss: 32.1783 - val_mean_absolute_error: 3.6141
11650  epoch_end_callback epoch 9944 lr 3.90625e-06
11651  Epoch 9946/10000
11652   - 0s - loss: 1.1713e-04 - mean_absolute_error: 0.0024 - val_loss: 32.1797 - val_mean_absolute_error: 3.6141
11653  epoch_end_callback epoch 9945 lr 3.90625e-06
11654  Epoch 9947/10000
11655   - 0s - loss: 1.1452e-04 - mean_absolute_error: 0.0025 - val_loss: 32.1777 - val_mean_absolute_error: 3.6139
11656  epoch_end_callback epoch 9946 lr 3.90625e-06
11657  Epoch 9948/10000
11658   - 0s - loss: 1.1696e-04 - mean_absolute_error: 0.0027 - val_loss: 32.1805 - val_mean_absolute_error: 3.6142
11659  epoch_end_callback epoch 9947 lr 3.90625e-06
11660  Epoch 9949/10000
11661   - 0s - loss: 1.1785e-04 - mean_absolute_error: 0.0026 - val_loss: 32.1786 - val_mean_absolute_error: 3.6141
11662  epoch_end_callback epoch 9948 lr 3.90625e-06
11663  Epoch 9950/10000
11664   - 0s - loss: 1.1615e-04 - mean_absolute_error: 0.0025 - val_loss: 32.1776 - val_mean_absolute_error: 3.6146
11665
11666  Epoch 09950: saving model to ./model/model_Epoch9950_val_mean_absolute_error3.615.h5
11667  epoch_end_callback epoch 9949 lr 3.90625e-06
11668  Epoch 9951/10000
11669   - 0s - loss: 1.1920e-04 - mean_absolute_error: 0.0029 - val_loss: 32.1753 - val_mean_absolute_error: 3.6138
11670  epoch_end_callback epoch 9950 lr 3.90625e-06
11671  Epoch 9952/10000
11672   - 0s - loss: 1.1633e-04 - mean_absolute_error: 0.0026 - val_loss: 32.1754 - val_mean_absolute_error: 3.6138
11673  epoch_end_callback epoch 9951 lr 3.90625e-06
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11674  Epoch 9953/10000
11675   - 0s - loss: 1.1759e-04 - mean_absolute_error: 0.0026 -
        val_loss: 32.1792 - val_mean_absolute_error: 3.6141
11676  epoch_end_callback epoch 9952 lr 3.90625e-06
11677  Epoch 9954/10000
11678   - 0s - loss: 1.1586e-04 - mean_absolute_error: 0.0025 -
        val_loss: 32.1766 - val_mean_absolute_error: 3.6140
11679  epoch_end_callback epoch 9953 lr 3.90625e-06
11680  Epoch 9955/10000
11681   - 0s - loss: 1.1653e-04 - mean_absolute_error: 0.0027 -
        val_loss: 32.1784 - val_mean_absolute_error: 3.6142
11682  epoch_end_callback epoch 9954 lr 3.90625e-06
11683  Epoch 9956/10000
11684   - 0s - loss: 1.1704e-04 - mean_absolute_error: 0.0025 -
        val_loss: 32.1822 - val_mean_absolute_error: 3.6140
11685  epoch_end_callback epoch 9955 lr 3.90625e-06
11686  Epoch 9957/10000
11687   - 0s - loss: 1.1510e-04 - mean_absolute_error: 0.0025 -
        val_loss: 32.1838 - val_mean_absolute_error: 3.6139
11688  epoch_end_callback epoch 9956 lr 3.90625e-06
11689  Epoch 9958/10000
11690   - 0s - loss: 1.1482e-04 - mean_absolute_error: 0.0029 -
        val_loss: 32.1823 - val_mean_absolute_error: 3.6141
11691  epoch_end_callback epoch 9957 lr 3.90625e-06
11692  Epoch 9959/10000
11693   - 0s - loss: 1.1704e-04 - mean_absolute_error: 0.0028 -
        val_loss: 32.1817 - val_mean_absolute_error: 3.6144
11694  epoch_end_callback epoch 9958 lr 3.90625e-06
11695  Epoch 9960/10000
11696   - 0s - loss: 1.1542e-04 - mean_absolute_error: 0.0028 -
        val_loss: 32.1785 - val_mean_absolute_error: 3.6140
11697
11698  Epoch 09960: saving model to ./model/
        model_Epoch9960_val_mean_absolute_error3.614.h5
11699  epoch_end_callback epoch 9959 lr 3.90625e-06
11700  Epoch 9961/10000
11701   - 0s - loss: 1.1598e-04 - mean_absolute_error: 0.0025 -
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11701 val_loss: 32.1803 - val_mean_absolute_error: 3.6141
11702 epoch_end_callback epoch 9960 lr 3.90625e-06
11703 Epoch 9962/10000
11704  - 0s - loss: 1.2172e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1790 - val_mean_absolute_error: 3.6139
11705 epoch_end_callback epoch 9961 lr 3.90625e-06
11706 Epoch 9963/10000
11707  - 0s - loss: 1.1561e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1783 - val_mean_absolute_error: 3.6142
11708 epoch_end_callback epoch 9962 lr 3.90625e-06
11709 Epoch 9964/10000
11710  - 0s - loss: 1.2278e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1752 - val_mean_absolute_error: 3.6137
11711 epoch_end_callback epoch 9963 lr 3.90625e-06
11712 Epoch 9965/10000
11713  - 0s - loss: 1.1771e-04 - mean_absolute_error: 0.0025 -
       val_loss: 32.1766 - val_mean_absolute_error: 3.6137
11714 epoch_end_callback epoch 9964 lr 3.90625e-06
11715 Epoch 9966/10000
11716  - 0s - loss: 1.1752e-04 - mean_absolute_error: 0.0024 -
       val_loss: 32.1736 - val_mean_absolute_error: 3.6140
11717 epoch_end_callback epoch 9965 lr 3.90625e-06
11718 Epoch 9967/10000
11719  - 0s - loss: 1.1457e-04 - mean_absolute_error: 0.0025 -
       val_loss: 32.1789 - val_mean_absolute_error: 3.6137
11720 epoch_end_callback epoch 9966 lr 3.90625e-06
11721 Epoch 9968/10000
11722  - 0s - loss: 1.1813e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1807 - val_mean_absolute_error: 3.6142
11723 epoch_end_callback epoch 9967 lr 3.90625e-06
11724 Epoch 9969/10000
11725  - 0s - loss: 1.1764e-04 - mean_absolute_error: 0.0030 -
       val_loss: 32.1805 - val_mean_absolute_error: 3.6141
11726 epoch_end_callback epoch 9968 lr 3.90625e-06
11727 Epoch 9970/10000
11728  - 0s - loss: 1.1582e-04 - mean_absolute_error: 0.0025 -
       val_loss: 32.1812 - val_mean_absolute_error: 3.6142
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11729

11730 Epoch 09970: saving model to ./model/
model_Epoch9970_val_mean_absolute_error3.614.h5

11731 epoch_end_callback epoch 9969 lr 3.90625e-06

11732 Epoch 9971/10000

11733 - 0s - loss: 1.2068e-04 - mean_absolute_error: 0.0027 - val_loss: 32.1802 - val_mean_absolute_error: 3.6140

11734 epoch_end_callback epoch 9970 lr 3.90625e-06

11735 Epoch 9972/10000

11736 - 0s - loss: 1.1679e-04 - mean_absolute_error: 0.0026 - val_loss: 32.1763 - val_mean_absolute_error: 3.6140

11737 epoch_end_callback epoch 9971 lr 3.90625e-06

11738 Epoch 9973/10000

11739 - 0s - loss: 1.2314e-04 - mean_absolute_error: 0.0026 - val_loss: 32.1726 - val_mean_absolute_error: 3.6140

11740 epoch_end_callback epoch 9972 lr 3.90625e-06

11741 Epoch 9974/10000

11742 - 0s - loss: 1.0525e-04 - mean_absolute_error: 0.0024 - val_loss: 32.1770 - val_mean_absolute_error: 3.6138

11743 epoch_end_callback epoch 9973 lr 3.90625e-06

11744 Epoch 9975/10000

11745 - 0s - loss: 1.2092e-04 - mean_absolute_error: 0.0028 - val_loss: 32.1798 - val_mean_absolute_error: 3.6140

11746 epoch_end_callback epoch 9974 lr 3.90625e-06

11747 Epoch 9976/10000

11748 - 0s - loss: 1.1643e-04 - mean_absolute_error: 0.0026 - val_loss: 32.1748 - val_mean_absolute_error: 3.6137

11749 epoch_end_callback epoch 9975 lr 3.90625e-06

11750 Epoch 9977/10000

11751 - 0s - loss: 1.1645e-04 - mean_absolute_error: 0.0027 - val_loss: 32.1776 - val_mean_absolute_error: 3.6139

11752 epoch_end_callback epoch 9976 lr 3.90625e-06

11753 Epoch 9978/10000

11754 - 0s - loss: 1.1322e-04 - mean_absolute_error: 0.0026 - val_loss: 32.1879 - val_mean_absolute_error: 3.6142

11755 epoch_end_callback epoch 9977 lr 3.90625e-06

11756 Epoch 9979/10000

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11757    - 0s - loss: 1.1749e-04 - mean_absolute_error: 0.0028 -
         val_loss: 32.1801 - val_mean_absolute_error: 3.6140
11758  epoch_end_callback epoch 9978 lr 3.90625e-06
11759  Epoch 9980/10000
11760    - 0s - loss: 1.1249e-04 - mean_absolute_error: 0.0024 -
         val_loss: 32.1888 - val_mean_absolute_error: 3.6138
11761
11762  Epoch 09980: saving model to ./model/
         model_Epoch9980_val_mean_absolute_error3.614.h5
11763  epoch_end_callback epoch 9979 lr 3.90625e-06
11764  Epoch 9981/10000
11765    - 0s - loss: 1.1630e-04 - mean_absolute_error: 0.0025 -
         val_loss: 32.1910 - val_mean_absolute_error: 3.6144
11766  epoch_end_callback epoch 9980 lr 3.90625e-06
11767  Epoch 9982/10000
11768    - 0s - loss: 1.1393e-04 - mean_absolute_error: 0.0025 -
         val_loss: 32.1834 - val_mean_absolute_error: 3.6142
11769  epoch_end_callback epoch 9981 lr 3.90625e-06
11770  Epoch 9983/10000
11771    - 0s - loss: 1.1984e-04 - mean_absolute_error: 0.0026 -
         val_loss: 32.1836 - val_mean_absolute_error: 3.6144
11772  epoch_end_callback epoch 9982 lr 3.90625e-06
11773  Epoch 9984/10000
11774    - 0s - loss: 1.1688e-04 - mean_absolute_error: 0.0028 -
         val_loss: 32.1763 - val_mean_absolute_error: 3.6138
11775  epoch_end_callback epoch 9983 lr 3.90625e-06
11776  Epoch 9985/10000
11777    - 0s - loss: 1.1549e-04 - mean_absolute_error: 0.0026 -
         val_loss: 32.1788 - val_mean_absolute_error: 3.6140
11778  epoch_end_callback epoch 9984 lr 3.90625e-06
11779  Epoch 9986/10000
11780    - 0s - loss: 1.1472e-04 - mean_absolute_error: 0.0026 -
         val_loss: 32.1760 - val_mean_absolute_error: 3.6137
11781  epoch_end_callback epoch 9985 lr 3.90625e-06
11782  Epoch 9987/10000
11783    - 0s - loss: 1.2215e-04 - mean_absolute_error: 0.0024 -
         val_loss: 32.1738 - val_mean_absolute_error: 3.6138
```

```
11784  epoch_end_callback epoch 9986 lr 3.90625e-06
11785  Epoch 9988/10000
11786   - 0s - loss: 1.1621e-04 - mean_absolute_error: 0.0025 -
       val_loss: 32.1788 - val_mean_absolute_error: 3.6139
11787  epoch_end_callback epoch 9987 lr 3.90625e-06
11788  Epoch 9989/10000
11789   - 0s - loss: 1.1577e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1706 - val_mean_absolute_error: 3.6136
11790  epoch_end_callback epoch 9988 lr 3.90625e-06
11791  Epoch 9990/10000
11792   - 0s - loss: 1.1877e-04 - mean_absolute_error: 0.0025 -
       val_loss: 32.1817 - val_mean_absolute_error: 3.6138
11793
11794  Epoch 09990: saving model to ./model/
       model_Epoch9990_val_mean_absolute_error3.614.h5
11795  epoch_end_callback epoch 9989 lr 3.90625e-06
11796  Epoch 9991/10000
11797   - 0s - loss: 1.1531e-04 - mean_absolute_error: 0.0026 -
       val_loss: 32.1756 - val_mean_absolute_error: 3.6141
11798  epoch_end_callback epoch 9990 lr 3.90625e-06
11799  Epoch 9992/10000
11800   - 0s - loss: 1.1364e-04 - mean_absolute_error: 0.0028 -
       val_loss: 32.1813 - val_mean_absolute_error: 3.6140
11801  epoch_end_callback epoch 9991 lr 3.90625e-06
11802  Epoch 9993/10000
11803   - 0s - loss: 1.1558e-04 - mean_absolute_error: 0.0029 -
       val_loss: 32.1793 - val_mean_absolute_error: 3.6143
11804  epoch_end_callback epoch 9992 lr 3.90625e-06
11805  Epoch 9994/10000
11806   - 0s - loss: 1.1591e-04 - mean_absolute_error: 0.0027 -
       val_loss: 32.1786 - val_mean_absolute_error: 3.6139
11807  epoch_end_callback epoch 9993 lr 3.90625e-06
11808  Epoch 9995/10000
11809   - 0s - loss: 1.1412e-04 - mean_absolute_error: 0.0025 -
       val_loss: 32.1703 - val_mean_absolute_error: 3.6139
11810  epoch_end_callback epoch 9994 lr 3.90625e-06
11811  Epoch 9996/10000
```

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11812    - 0s - loss: 1.1816e-04 - mean_absolute_error: 0.0031 -
         val_loss: 32.1812 - val_mean_absolute_error: 3.6143
11813  epoch_end_callback epoch 9995 lr 3.90625e-06
11814  Epoch 9997/10000
11815    - 0s - loss: 1.1610e-04 - mean_absolute_error: 0.0023 -
         val_loss: 32.1811 - val_mean_absolute_error: 3.6143
11816  epoch_end_callback epoch 9996 lr 3.90625e-06
11817  Epoch 9998/10000
11818    - 0s - loss: 1.1390e-04 - mean_absolute_error: 0.0026 -
         val_loss: 32.1774 - val_mean_absolute_error: 3.6137
11819  epoch_end_callback epoch 9997 lr 3.90625e-06
11820  Epoch 9999/10000
11821    - 0s - loss: 1.0531e-04 - mean_absolute_error: 0.0023 -
         val_loss: 32.1794 - val_mean_absolute_error: 3.6137
11822  epoch_end_callback epoch 9998 lr 3.90625e-06
11823  Epoch 10000/10000
11824    - 0s - loss: 1.1994e-04 - mean_absolute_error: 0.0027 -
         val_loss: 32.1775 - val_mean_absolute_error: 3.6140
11825
11826  Epoch 10000: saving model to ./model/
         model_Epoch10000_val_mean_absolute_error3.614.h5
11827  epoch_end_callback epoch 9999 lr 3.90625e-06
11828  history.history.keys = ['val_mean_absolute_error', 'loss', '
         lr', 'mean_absolute_error', 'val_loss']
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11831  ##############model evaluate##############
11832  results test_loss: 20.819134282130822
11833  results test_mean_absolute_error: 3.026569544100294
11834  ##############model predict##############
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11836  Process finished with exit code 0
11837
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