```
1  ssh://root@103.254.67.181:10006/usr/bin/python -u /home/sunfengzhen/pycharm/convlstm_keras_typhoon/train.
   py
2  Using TensorFlow backend.
3  2019-10-15 09:27:36.909931: I tensorflow/core/platform/cpu_feature_guard.cc:141] Your CPU supports
   instructions that this TensorFlow binary was not compiled to use: AVX2 FMA
4  2019-10-15 09:27:37.168437: I tensorflow/core/common_runtime/gpu/gpu_device.cc:1432] Found device 0 with
   properties:
5  name: GeForce GTX 1080 Ti major: 6 minor: 1 memoryClockRate(GHz): 1.582
6  pciBusID: 0000:82:00.0
7  totalMemory: 10.92GiB freeMemory: 10.76GiB
8  2019-10-15 09:27:37.168502: I tensorflow/core/common_runtime/gpu/gpu_device.cc:1511] Adding visible gpu
   devices: 0
9  2019-10-15 09:27:37.515502: I tensorflow/core/common_runtime/gpu/gpu_device.cc:982] Device interconnect
   StreamExecutor with strength 1 edge matrix:
10 2019-10-15 09:27:37.515566: I tensorflow/core/common_runtime/gpu/gpu_device.cc:988]      0
11 2019-10-15 09:27:37.515575: I tensorflow/core/common_runtime/gpu/gpu_device.cc:1001] 0:   N
12 2019-10-15 09:27:37.515954: I tensorflow/core/common_runtime/gpu/gpu_device.cc:1115] Created TensorFlow
   device (/job:localhost/replica:0/task:0/device:GPU:0 with 10409 MB memory) -> physical GPU (device: 0,
   name: GeForce GTX 1080 Ti, pci bus id: 0000:82:00.0, compute capability: 6.1)
13 *************generate_seq*************
14 num of png_file_list = 2064
15 num of temp_nei_list 2064 for year A
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21  num of typhoon_seq_names 168
22  type typhoon_seq <type 'numpy.ndarray'>
23  typhoon_seq.shape (168, 12, 55, 55, 3)
24  train_seq.shape (168, 12, 55, 55, 3)
25  valid_seq.shape (17, 12, 55, 55, 3)
26  trainX.shape: (168, 6, 55, 55, 3)
27  trainY.shape: (168, 6, 55, 55, 3)
28  validX.shape: (17, 6, 55, 55, 3)
29  validY.shape: (17, 6, 55, 55, 3)
30  #############model build#############
31
32  Layer (type)                 Output Shape              Param #
33  =================================================================
34  conv_lst_m2d_1 (ConvLSTM2D)  (None, 6, 55, 55, 32)     40448
35  _____
36  batch_normalization_1 (Batch (None, 6, 55, 55, 32)     128
37  _____
38  conv_lst_m2d_2 (ConvLSTM2D)  (None, 6, 55, 55, 32)     73856
39  _____
40  batch_normalization_2 (Batch (None, 6, 55, 55, 32)     128
41  _____
42  conv_lst_m2d_3 (ConvLSTM2D)  (None, 6, 55, 55, 32)     73856
43  _____
44  batch_normalization_3 (Batch (None, 6, 55, 55, 32)     128
45  _____
46  conv_lst_m2d_4 (ConvLSTM2D)  (None, 6, 55, 55, 32)     73856
47  _____
48  batch_normalization_4 (Batch (None, 6, 55, 55, 32)     128
49  _____
50  conv3d_1 (Conv3D)            (None, 6, 55, 55, 3)      2595
51  =================================================================
52  Total params: 265,123
53  Trainable params: 264,867
54  Non-trainable params: 256
55  _____
56  model.input= Tensor("conv_lst_m2d_1_input:0", shape=(?, 6, 55, 55, 3), dtype=float32)
57  model.input.name= conv_lst_m2d_1_input:0
```

```
58  model.input.shape= (?, 6, 55, 55, 3)
59  model.output= Tensor("conv3d_1/Sigmoid:0", shape=(?, ?, 55, 55, 3), dtype=float32)
60  model.output.name= conv3d_1/Sigmoid:0
61  model.output.shape= (?, ?, 55, 55, 3)
62  #############model train#############
63  Train on 168 samples, validate on 17 samples
64  Epoch 1/100
65   - 12s - loss: 0.0236 - mean_squared_error: 0.0236 - val_loss: 0.0149 - val_mean_squared_error: 0.0149
66  epoch_end_callback epoch 0 lr 0.001
67  Epoch 2/100
68   - 5s - loss: 0.0114 - mean_squared_error: 0.0114 - val_loss: 0.0121 - val_mean_squared_error: 0.0121
69  epoch_end_callback epoch 1 lr 0.001
70  Epoch 3/100
71   - 5s - loss: 0.0095 - mean_squared_error: 0.0095 - val_loss: 0.0093 - val_mean_squared_error: 0.0093
72  epoch_end_callback epoch 2 lr 0.001
73  Epoch 4/100
74   - 5s - loss: 0.0089 - mean_squared_error: 0.0089 - val_loss: 0.0101 - val_mean_squared_error: 0.0101
75
76  Epoch 00004: ReduceLROnPlateau reducing learning rate to 0.0010000000475.
77  epoch_end_callback epoch 3 lr 0.001
78  Epoch 5/100
79   - 5s - loss: 0.0073 - mean_squared_error: 0.0073 - val_loss: 0.0091 - val_mean_squared_error: 0.0091
80  epoch_end_callback epoch 4 lr 0.000100000005
81  Epoch 6/100
82   - 5s - loss: 0.0070 - mean_squared_error: 0.0070 - val_loss: 0.0080 - val_mean_squared_error: 0.0080
83  epoch_end_callback epoch 5 lr 0.000100000005
84  Epoch 7/100
85   - 5s - loss: 0.0070 - mean_squared_error: 0.0070 - val_loss: 0.0076 - val_mean_squared_error: 0.0076
86  epoch_end_callback epoch 6 lr 0.000100000005
87  Epoch 8/100
88   - 4s - loss: 0.0070 - mean_squared_error: 0.0070 - val_loss: 0.0075 - val_mean_squared_error: 0.0075
89
90  Epoch 00008: ReduceLROnPlateau reducing learning rate to 1.0000000475e-05.
91  epoch_end_callback epoch 7 lr 0.000100000005
92  Epoch 9/100
93   - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0073 - val_mean_squared_error: 0.0073
94  epoch_end_callback epoch 8 lr 1.0000001e-05
95  Epoch 10/100
96   - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0072 - val_mean_squared_error: 0.0072
97  epoch_end_callback epoch 9 lr 1.0000001e-05
98  Epoch 11/100
99   - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0071 - val_mean_squared_error: 0.0071
100
101 Epoch 00011: ReduceLROnPlateau reducing learning rate to 1.00000006569e-06.
102 epoch_end_callback epoch 10 lr 1.0000001e-05
103 Epoch 12/100
104  - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0071 - val_mean_squared_error: 0.0071
105
106 Epoch 00012: ReduceLROnPlateau reducing learning rate to 1e-06.
107 epoch_end_callback epoch 11 lr 1.0000001e-06
108 Epoch 13/100
109  - 4s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0071 - val_mean_squared_error: 0.0071
110 epoch_end_callback epoch 12 lr 1e-06
111 Epoch 14/100
112  - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0071 - val_mean_squared_error: 0.0071
113 epoch_end_callback epoch 13 lr 1e-06
114 Epoch 15/100
115  - 4s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0071 - val_mean_squared_error: 0.0071
116 epoch_end_callback epoch 14 lr 1e-06
117 Epoch 16/100
118  - 4s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0071 - val_mean_squared_error: 0.0071
```

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119 epoch_end_callback epoch 15 lr 1e-06
120 Epoch 17/100
121  - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0071 - val_mean_squared_error: 0.0071
122 epoch_end_callback epoch 16 lr 1e-06
123 Epoch 18/100
124  - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0071 - val_mean_squared_error: 0.0071
125 epoch_end_callback epoch 17 lr 1e-06
126 Epoch 19/100
127  - 4s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0071 - val_mean_squared_error: 0.0071
128 epoch_end_callback epoch 18 lr 1e-06
129 Epoch 20/100
130  - 4s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0071 - val_mean_squared_error: 0.0071
131 epoch_end_callback epoch 19 lr 1e-06
132 Epoch 21/100
133  - 4s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0071 - val_mean_squared_error: 0.0071
134 epoch_end_callback epoch 20 lr 1e-06
135 Epoch 22/100
136  - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0071 - val_mean_squared_error: 0.0071
137 epoch_end_callback epoch 21 lr 1e-06
138 Epoch 23/100
139  - 4s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0071 - val_mean_squared_error: 0.0071
140 epoch_end_callback epoch 22 lr 1e-06
141 Epoch 24/100
142  - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0071 - val_mean_squared_error: 0.0071
143 epoch_end_callback epoch 23 lr 1e-06
144 Epoch 25/100
145  - 4s - loss: 0.0068 - mean_squared_error: 0.0068 - val_loss: 0.0071 - val_mean_squared_error: 0.0071
146 epoch_end_callback epoch 24 lr 1e-06
147 Epoch 26/100
148  - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0071 - val_mean_squared_error: 0.0071
149 epoch_end_callback epoch 25 lr 1e-06
150 Epoch 27/100
151  - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0071 - val_mean_squared_error: 0.0071
152 epoch_end_callback epoch 26 lr 1e-06
153 Epoch 28/100
154  - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0071 - val_mean_squared_error: 0.0071
155 epoch_end_callback epoch 27 lr 1e-06
156 Epoch 29/100
157  - 4s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0071 - val_mean_squared_error: 0.0071
158 epoch_end_callback epoch 28 lr 1e-06
159 Epoch 30/100
160  - 4s - loss: 0.0068 - mean_squared_error: 0.0068 - val_loss: 0.0071 - val_mean_squared_error: 0.0071
161 epoch_end_callback epoch 29 lr 1e-06
162 Epoch 31/100
163  - 4s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0071 - val_mean_squared_error: 0.0071
164 epoch_end_callback epoch 30 lr 1e-06
165 Epoch 32/100
166  - 4s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0071 - val_mean_squared_error: 0.0071
167 epoch_end_callback epoch 31 lr 1e-06
168 Epoch 33/100
169  - 4s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0071 - val_mean_squared_error: 0.0071
170 epoch_end_callback epoch 32 lr 1e-06
171 Epoch 34/100
172  - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0071 - val_mean_squared_error: 0.0071
173 epoch_end_callback epoch 33 lr 1e-06
174 Epoch 35/100
175  - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0071 - val_mean_squared_error: 0.0071
176 epoch_end_callback epoch 34 lr 1e-06
177 Epoch 36/100
178  - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0071 - val_mean_squared_error: 0.0071
179 epoch_end_callback epoch 35 lr 1e-06
```

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180  Epoch 37/100
181   - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0071 - val_mean_squared_error: 0.0071
182  epoch_end_callback epoch 36 lr 1e-06
183  Epoch 38/100
184   - 4s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0071 - val_mean_squared_error: 0.0071
185  epoch_end_callback epoch 37 lr 1e-06
186  Epoch 39/100
187   - 4s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0071 - val_mean_squared_error: 0.0071
188  epoch_end_callback epoch 38 lr 1e-06
189  Epoch 40/100
190   - 4s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0071 - val_mean_squared_error: 0.0071
191  epoch_end_callback epoch 39 lr 1e-06
192  Epoch 41/100
193   - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0071 - val_mean_squared_error: 0.0071
194  epoch_end_callback epoch 40 lr 1e-06
195  Epoch 42/100
196   - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0071 - val_mean_squared_error: 0.0071
197  epoch_end_callback epoch 41 lr 1e-06
198  Epoch 43/100
199   - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0071 - val_mean_squared_error: 0.0071
200  epoch_end_callback epoch 42 lr 1e-06
201  Epoch 44/100
202   - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0071 - val_mean_squared_error: 0.0071
203  epoch_end_callback epoch 43 lr 1e-06
204  Epoch 45/100
205   - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0071 - val_mean_squared_error: 0.0071
206  epoch_end_callback epoch 44 lr 1e-06
207  Epoch 46/100
208   - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
209  epoch_end_callback epoch 45 lr 1e-06
210  Epoch 47/100
211   - 4s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
212  epoch_end_callback epoch 46 lr 1e-06
213  Epoch 48/100
214   - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
215  epoch_end_callback epoch 47 lr 1e-06
216  Epoch 49/100
217   - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
218  epoch_end_callback epoch 48 lr 1e-06
219  Epoch 50/100
220   - 5s - loss: 0.0068 - mean_squared_error: 0.0068 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
221  epoch_end_callback epoch 49 lr 1e-06
222  Epoch 51/100
223   - 5s - loss: 0.0068 - mean_squared_error: 0.0068 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
224  epoch_end_callback epoch 50 lr 1e-06
225  Epoch 52/100
226   - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
227  epoch_end_callback epoch 51 lr 1e-06
228  Epoch 53/100
229   - 5s - loss: 0.0068 - mean_squared_error: 0.0068 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
230  epoch_end_callback epoch 52 lr 1e-06
231  Epoch 54/100
232   - 5s - loss: 0.0068 - mean_squared_error: 0.0068 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
233  epoch_end_callback epoch 53 lr 1e-06
234  Epoch 55/100
235   - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
236  epoch_end_callback epoch 54 lr 1e-06
237  Epoch 56/100
238   - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
239  epoch_end_callback epoch 55 lr 1e-06
240  Epoch 57/100
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241   - 5s - loss: 0.0068 - mean_squared_error: 0.0068 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
242  epoch_end_callback epoch 56 lr 1e-06
243  Epoch 58/100
244   - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
245  epoch_end_callback epoch 57 lr 1e-06
246  Epoch 59/100
247   - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
248  epoch_end_callback epoch 58 lr 1e-06
249  Epoch 60/100
250   - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
251  epoch_end_callback epoch 59 lr 1e-06
252  Epoch 61/100
253   - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
254  epoch_end_callback epoch 60 lr 1e-06
255  Epoch 62/100
256   - 4s - loss: 0.0068 - mean_squared_error: 0.0068 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
257  epoch_end_callback epoch 61 lr 1e-06
258  Epoch 63/100
259   - 5s - loss: 0.0068 - mean_squared_error: 0.0068 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
260  epoch_end_callback epoch 62 lr 1e-06
261  Epoch 64/100
262   - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
263  epoch_end_callback epoch 63 lr 1e-06
264  Epoch 65/100
265   - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
266  epoch_end_callback epoch 64 lr 1e-06
267  Epoch 66/100
268   - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
269  epoch_end_callback epoch 65 lr 1e-06
270  Epoch 67/100
271   - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
272  epoch_end_callback epoch 66 lr 1e-06
273  Epoch 68/100
274   - 5s - loss: 0.0068 - mean_squared_error: 0.0068 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
275  epoch_end_callback epoch 67 lr 1e-06
276  Epoch 69/100
277   - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
278  epoch_end_callback epoch 68 lr 1e-06
279  Epoch 70/100
280   - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
281  epoch_end_callback epoch 69 lr 1e-06
282  Epoch 71/100
283   - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
284  epoch_end_callback epoch 70 lr 1e-06
285  Epoch 72/100
286   - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
287  epoch_end_callback epoch 71 lr 1e-06
288  Epoch 73/100
289   - 5s - loss: 0.0068 - mean_squared_error: 0.0068 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
290  epoch_end_callback epoch 72 lr 1e-06
291  Epoch 74/100
292   - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
293  epoch_end_callback epoch 73 lr 1e-06
294  Epoch 75/100
295   - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
296  epoch_end_callback epoch 74 lr 1e-06
297  Epoch 76/100
298   - 5s - loss: 0.0068 - mean_squared_error: 0.0068 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
299  epoch_end_callback epoch 75 lr 1e-06
300  Epoch 77/100
301   - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
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302  epoch_end_callback epoch 76 lr 1e-06
303  Epoch 78/100
304   - 4s - loss: 0.0068 - mean_squared_error: 0.0068 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
305  epoch_end_callback epoch 77 lr 1e-06
306  Epoch 79/100
307   - 5s - loss: 0.0068 - mean_squared_error: 0.0068 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
308  epoch_end_callback epoch 78 lr 1e-06
309  Epoch 80/100
310   - 5s - loss: 0.0068 - mean_squared_error: 0.0068 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
311  epoch_end_callback epoch 79 lr 1e-06
312  Epoch 81/100
313   - 4s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
314  epoch_end_callback epoch 80 lr 1e-06
315  Epoch 82/100
316   - 5s - loss: 0.0068 - mean_squared_error: 0.0068 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
317  epoch_end_callback epoch 81 lr 1e-06
318  Epoch 83/100
319   - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
320  epoch_end_callback epoch 82 lr 1e-06
321  Epoch 84/100
322   - 4s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
323  epoch_end_callback epoch 83 lr 1e-06
324  Epoch 85/100
325   - 5s - loss: 0.0068 - mean_squared_error: 0.0068 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
326  epoch_end_callback epoch 84 lr 1e-06
327  Epoch 86/100
328   - 4s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
329  epoch_end_callback epoch 85 lr 1e-06
330  Epoch 87/100
331   - 4s - loss: 0.0068 - mean_squared_error: 0.0068 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
332  epoch_end_callback epoch 86 lr 1e-06
333  Epoch 88/100
334   - 5s - loss: 0.0068 - mean_squared_error: 0.0068 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
335  epoch_end_callback epoch 87 lr 1e-06
336  Epoch 89/100
337   - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
338  epoch_end_callback epoch 88 lr 1e-06
339  Epoch 90/100
340   - 5s - loss: 0.0068 - mean_squared_error: 0.0068 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
341  epoch_end_callback epoch 89 lr 1e-06
342  Epoch 91/100
343   - 4s - loss: 0.0068 - mean_squared_error: 0.0068 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
344  epoch_end_callback epoch 90 lr 1e-06
345  Epoch 92/100
346   - 5s - loss: 0.0068 - mean_squared_error: 0.0068 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
347  epoch_end_callback epoch 91 lr 1e-06
348  Epoch 93/100
349   - 4s - loss: 0.0068 - mean_squared_error: 0.0068 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
350  epoch_end_callback epoch 92 lr 1e-06
351  Epoch 94/100
352   - 5s - loss: 0.0068 - mean_squared_error: 0.0068 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
353  epoch_end_callback epoch 93 lr 1e-06
354  Epoch 95/100
355   - 4s - loss: 0.0068 - mean_squared_error: 0.0068 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
356  epoch_end_callback epoch 94 lr 1e-06
357  Epoch 96/100
358   - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
359  epoch_end_callback epoch 95 lr 1e-06
360  Epoch 97/100
361   - 5s - loss: 0.0068 - mean_squared_error: 0.0068 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
362  epoch_end_callback epoch 96 lr 1e-06
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363  Epoch 98/100
364   - 5s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
365  epoch_end_callback epoch 97 lr 1e-06
366  Epoch 99/100
367   - 4s - loss: 0.0069 - mean_squared_error: 0.0069 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
368  epoch_end_callback epoch 98 lr 1e-06
369  Epoch 100/100
370   - 4s - loss: 0.0068 - mean_squared_error: 0.0068 - val_loss: 0.0070 - val_mean_squared_error: 0.0070
371  epoch_end_callback epoch 99 lr 1e-06
372  Model Saved after train end
373  time use:722.634810925s
374
375  Process finished with exit code 0
376
```