light_data_3.22/result3/3.29：

1. **/trainedNet: 用 light_data_3.22/result4/3.28/mix_bias_amp 中训练好的网络来测试其他数据的性能。测试数据为不同 bias、不同 amp 的数据，且数据归一化。**

1.1 /v1：用 light_data_3.22/result4/3.28/mix_bias_amp/Threenonlinear1/net/net1 中训练好的网络来测试 3.22/data/amp0.1613 中数据的性能

```
The network used is data_save/light_data_3.22/result4/3.28/mix_bias_amp/Threenonlinear1/net/net1
The data used is data_save/light_data_3.22/data/10M/amp0.1613
```

1.2 /v2：用 light_data_3.22/result4/3.28/mix_bias_amp/Threenonlinear1/net/net6 中训练好的网络来测试 3.22/data/amp0.1613 中数据的性能

```
The network used is data_save/light_data_3.22/result4/3.28/mix_bias_amp/Threenonlinear1/net/net6
The data used is data_save/light_data_3.22/data/10M/amp0.1613
```

1.3 /v3：用 light_data_3.22/result4/3.28/mix_bias_amp/Threenonlinear2/net/net1 中训练好的网络来测试 3.22/data/amp0.1613 中数据的性能

```
The network used is data_save/light_data_3.22/result4/3.28/mix_bias_amp/Threenonlinear2/net/net1
The data used is data_save/light_data_3.22/data/10M/amp0.1613
```

1.4 /v4：用 light_data_3.22/result4/3.28/mix_bias_amp/Threenonlinear2/net/net6 中训练好的网络来测试 3.22/data/amp0.1613 中数据的性能

```
The network used is data_save/light_data_3.22/result4/3.28/mix_bias_amp/Threenonlinear2/net/net6
The data used is data_save/light_data_3.22/data/10M/amp0.1613
```

1.5 /v5：用 light_data_3.22/result4/3.28/mix_bias_amp/Threenonlinear3/net/net1 中训练好的网络来测试 3.22/data/amp0.1613 中数据的性能

```
The network used is data_save/light_data_3.22/result4/3.28/mix_bias_amp/Threenonlinear3/net/net1
The data used is data_save/light_data_3.22/data/10M/amp0.1613
```

1.6 /v6：用 light_data_3.22/result4/3.28/mix_bias_amp/Threenonlinear3/net/net6 中训练好的网络来测试 3.22/data/amp0.1613 中数据的性能

```
The network used is data_save/light_data_3.22/result4/3.28/mix_bias_amp/Threenonlinear3/net/net6
The data used is data_save/light_data_3.22/data/10M/amp0.1613
```

1.7 /v7：用 light_data_3.22/result4/3.28/mix_bias_amp/Threenonlinear1/net/net1 中训练好的网络来测试 3.22/data/amp1 中数据的性能

```
The network used is data_save/light_data_3.22/result4/3.28/mix_bias_amp/Threenonlinear1/net/net1
The data used is data_save/light_data_3.22/data/10M/amp1
```

1.8 /v8：用 light_data_3.22/result4/3.28/mix_bias_amp/Threenonlinear1/net/net6 中训练好的网络来测试 3.22/data/amp1 中数据的性能

```
The network used is data_save/light_data_3.22/result4/3.28/mix_bias_amp/Threenonlinear1/net/net6
The data used is data_save/light_data_3.22/data/10M/amp1
```

1.9 /v9：用 light_data_3.22/result4/3.28/mix_bias_amp/Threenonlinear2/net/net1 中训练好的网络来测试 3.22/data/amp1 中数据的性能

```
The network used is data_save/light_data_3.22/result4/3.28/mix_bias_amp/Threenonlinear2/net/net1
The data used is data_save/light_data_3.22/data/10M/amp1
```

1.10 /v10：用 light_data_3.22/result4/3.28/mix_bias_amp/Threenonlinear2/net/net6 中训练好的网络来测试 3.22/data/amp1 中数据的性能

```
The network used is data_save/light_data_3.22/result4/3.28/mix_bias_amp/Threenonlinear2/net/net6
The data used is data_save/light_data_3.22/data/10M/amp1
```

1.11 /v11：用 light_data_3.22/result4/3.28/mix_bias_amp/Threenonlinear3/net/net1 中训练好的网络来测试 3.22/data/amp1 中数据的性能

```
The network used is data_save/light_data_3.22/result4/3.28/mix_bias_amp/Threenonlinear3/net/net1
The data used is data_save/light_data_3.22/data/10M/amp1
```

1.12 /v12：用 light_data_3.22/result4/3.28/mix_bias_amp/Threenonlinear3/net/net6 中训练好的网络来测试 3.22/data/amp1 中数据的性能

```
The network used is data_save/light_data_3.22/result4/3.28/mix_bias_amp/Threenonlinear3/net/net6
The data used is data_save/light_data_3.22/data/10M/amp1
```

light_data_3.22/result1/3.29：

1. /mix_bias/mix_amp:

1.1 /Threenonlinear1：信号的幅度只有最大幅度，即 32000。用的是 3.23 的程序 dnn_all_bias.m。一次把 amp=1 的所有 bias 的数据一起放进网络中训练，训练出来一个网络当作性能参考标准。

```
Threenonlinear ,
ini learningRate = 1.000000e-02 ,
min batch size = 400 ,
DropPeriod = 8 , DropFactor = 0.100000 ,
amp begin = 1 , amp end = 1 , amp step = 1
data_num = 100 , split num = 10 , train num = 950
validationFrequency is floor(numel(xTrain)/miniBatchSize/2)
origin rate = 1.000000e+07 , receive rate = 6.000000e+07
H order = 48 ,related num = 8
Hidden Units = 60
Add zero num = 24
```

2. /LS: 用 ls_bias.m，测试 h 的长度对性能的影响。

2.1 /norm_LS1：h 长度=12

```
LS
amp begin = 1 , amp end = 1 , amp step = 1
bias begin = 5.000000e-02 , bias end = 8.500000e-01 , bias step = 4.000000e-02
data_num = 100 , split num = 1 , train num = 90
origin rate = 1.000000e+07 , receive rate = 6.000000e+07
H order = 12 ,related num = 2
Add zero num = 6
```

2.2 norm_LS2：h 长度=18

```
LS
amp begin = 1.00000 , amp end = 1.00000 , amp step = 1.00000
bias begin = 0.05 , bias end = 0.85 , bias step = 0.04
data_num = 100 , split num = 1 , train num = 90
origin rate = 1.000000e+07 , receive rate = 6.000000e+07
H order = 18 ,related num = 3
Add zero num = 9
```

2.3 norm_LS3：h 长度=24

```
LS
amp begin = 1.00000 , amp end = 1.00000 , amp step = 1.00000
bias begin = 0.05 , bias end = 0.85 , bias step = 0.04
data_num = 100 , split num = 1 , train num = 90
origin rate = 1.000000e+07 , receive rate = 6.000000e+07
H order = 24 ,related num = 4
Add zero num = 12
```

2.4 norm_LS4：h 长度=30

```
LS
amp begin = 1.00000 , amp end = 1.00000 , amp step = 1.00000
bias begin = 0.05 , bias end = 0.85 , bias step = 0.04
data_num = 100 , split num = 1 , train num = 90
origin rate = 1.000000e+07 , receive rate = 6.000000e+07
H order = 30 ,related num = 5
Add zero num = 15
```

2.5 norm_LS5：h 长度=36

```
LS
amp begin = 1.00000 , amp end = 1.00000 , amp step = 1.00000
bias begin = 0.05 , bias end = 0.85 , bias step = 0.04
data_num = 100 , split num = 1 , train num = 90
origin rate = 1.000000e+07 , receive rate = 6.000000e+07
H order = 36 ,related num = 6
Add zero num = 18
```

2.6 norm_LS6：h 长度=42

```
LS
amp begin = 1.00000 , amp end = 1.00000 , amp step = 1.00000
bias begin = 0.05 , bias end = 0.85 , bias step = 0.04
data_num = 100 , split num = 1 , train num = 90
origin rate = 1.000000e+07 , receive rate = 6.000000e+07
H order = 42 ,related num = 7
Add zero num = 21
```

2.7 norm_LS7：h 长度=48

```
LS
amp begin = 1.00000 , amp end = 1.00000 , amp step = 1.00000
bias begin = 0.05 , bias end = 0.85 , bias step = 0.04
data_num = 100 , split num = 1 , train num = 90
origin rate = 1.000000e+07 , receive rate = 6.000000e+07
H order = 48 ,related num = 8
Add zero num = 24
```

2.8 norm_LS8：h 长度=54

```
LS
amp begin = 1.00000 , amp end = 1.00000 , amp step = 1.00000
bias begin = 0.05 , bias end = 0.85 , bias step = 0.04
data_num = 100 , split num = 1 , train num = 90
origin rate = 1.000000e+07 , receive rate = 6.000000e+07
H order = 54 ,related num = 9
Add zero num = 27
```

2.9 norm_LS9：h 长度=60

```
LS
amp begin = 1.00000 , amp end = 1.00000 , amp step = 1.00000
bias begin = 0.05 , bias end = 0.85 , bias step = 0.04
data_num = 100 , split num = 1 , train num = 90
origin rate = 1.000000e+07 , receive rate = 6.000000e+07
H order = 60 ,related num = 10
Add zero num = 30
```

light_data_3.22/result2/3.29：

1. /LS: 用 ls_bias.m，测试 h 的长度对性能的影响。

1.1 /norm_LS1：h 长度=12

```
LS
amp begin = 0.16130 , amp end = 0.16130 , amp step = 1.00000
bias begin = 0.05 , bias end = 0.85 , bias step = 0.04
data_num = 100 , split num = 1 , train num = 90
origin rate = 1.000000e+07 , receive rate = 6.000000e+07
H order = 12 ,related num = 2
Add zero num = 6
```

1.2 norm_LS2：h 长度=18

```
LS
amp begin = 0.16130 , amp end = 0.16130 , amp step = 1.00000
bias begin = 0.05 , bias end = 0.85 , bias step = 0.04
data_num = 100 , split num = 1 , train num = 90
origin rate = 1.000000e+07 , receive rate = 6.000000e+07
H order = 18 ,related num = 3
Add zero num = 9
```

1.3 norm_LS3：h 长度=24

```
LS
amp begin = 0.16130 , amp end = 0.16130 , amp step = 1.00000
bias begin = 0.05 , bias end = 0.85 , bias step = 0.04
data_num = 100 , split num = 1 , train num = 90
origin rate = 1.000000e+07 , receive rate = 6.000000e+07
H order = 24 ,related num = 4
Add zero num = 12
```

1.4 norm_LS4：h 长度=30

```
LS
amp begin = 0.16130 , amp end = 0.16130 , amp step = 1.00000
bias begin = 0.05 , bias end = 0.85 , bias step = 0.04
data_num = 100 , split num = 1 , train num = 90
origin rate = 1.000000e+07 , receive rate = 6.000000e+07
H order = 30 ,related num = 5
Add zero num = 15
```

1.5 norm_LS5：h 长度=36

```
LS
amp begin = 0.16130 , amp end = 0.16130 , amp step = 1.00000
bias begin = 0.05 , bias end = 0.85 , bias step = 0.04
data_num = 100 , split num = 1 , train num = 90
origin rate = 1.000000e+07 , receive rate = 6.000000e+07
H order = 36 ,related num = 6
Add zero num = 18
```

1.6 norm_LS6：h 长度=42

```
LS
amp begin = 0.16130 , amp end = 0.16130 , amp step = 1.00000
bias begin = 0.05 , bias end = 0.85 , bias step = 0.04
data_num = 100 , split num = 1 , train num = 90
origin rate = 1.000000e+07 , receive rate = 6.000000e+07
H order = 42 ,related num = 7
Add zero num = 21
```

1.7 norm_LS7：h 长度=48

```
LS
amp begin = 0.16130 , amp end = 0.16130 , amp step = 1.00000
bias begin = 0.05 , bias end = 0.85 , bias step = 0.04
data_num = 100 , split num = 1 , train num = 90
origin rate = 1.000000e+07 , receive rate = 6.000000e+07
H order = 48 ,related num = 8
Add zero num = 24
```

1.8 norm_LS8：h 长度=54

```
LS
amp begin = 0.16130 , amp end = 0.16130 , amp step = 1.00000
bias begin = 0.05 , bias end = 0.85 , bias step = 0.04
data_num = 100 , split num = 1 , train num = 90
origin rate = 1.000000e+07 , receive rate = 6.000000e+07
H order = 54 ,related num = 9
Add zero num = 27
```

1.9 norm_LS9：h 长度=60

```
LS
amp begin = 0.16130 , amp end = 0.16130 , amp step = 1.00000
bias begin = 0.05 , bias end = 0.85 , bias step = 0.04
data_num = 100 , split num = 1 , train num = 90
origin rate = 1.000000e+07 , receive rate = 6.000000e+07
H order = 60 ,related num = 10
Add zero num = 30
```