

Supplementary Table S1. The experiment results of validation process using 72 hyperparameters combinations for RNN.

| No | Number of Timestep | Number of Dimension | Learning rates | Dropout | Number of Layer | RMSE |
|----|--------------------|---------------------|----------------|---------|-----------------|----------|
| 1 | 5 | 10 | 0.001 | 20% | 1 | 6455.79 |
| 2 | 5 | 10 | 0.001 | 20% | 2 | 15102.78 |
| 3 | 5 | 10 | 0.001 | 50% | 1 | 20037.31 |
| 4 | 5 | 10 | 0.001 | 50% | 2 | 46488.23 |
| 5 | 5 | 10 | 0.001 | - | 1 | 615.21 |
| 6 | 5 | 10 | 0.001 | - | 2 | 2267.49 |
| 7 | 5 | 10 | 0.01 | 20% | 1 | 3132.61 |
| 8 | 5 | 10 | 0.01 | 20% | 2 | 10747.03 |
| 9 | 5 | 10 | 0.01 | 50% | 1 | 13736.34 |
| 10 | 5 | 10 | 0.01 | 50% | 2 | 40397.44 |
| 11 | 5 | 10 | 0.01 | - | 1 | 942.93 |
| 12 | 5 | 10 | 0.01 | - | 2 | 54945.72 |
| 13 | 5 | 30 | 0.001 | 20% | 1 | 8149.38 |
| 14 | 5 | 30 | 0.001 | 20% | 2 | 11932.18 |
| 15 | 5 | 30 | 0.001 | 50% | 1 | 11399.94 |
| 16 | 5 | 30 | 0.001 | 50% | 2 | 29420.98 |
| 17 | 5 | 30 | 0.001 | - | 1 | 2520.51 |
| 18 | 5 | 30 | 0.001 | - | 2 | 932.39 |
| 19 | 5 | 30 | 0.01 | 20% | 1 | 54952.61 |
| 20 | 5 | 30 | 0.01 | 20% | 2 | 11608.38 |
| 21 | 5 | 30 | 0.01 | 50% | 1 | 16836.73 |
| 22 | 5 | 30 | 0.01 | 50% | 2 | 28160.45 |
| 23 | 5 | 30 | 0.01 | - | 1 | 54997.90 |
| 24 | 5 | 30 | 0.01 | - | 2 | 2680.59 |
| 25 | 5 | 50 | 0.001 | 20% | 1 | 1516.92 |
| 26 | 5 | 50 | 0.001 | 20% | 2 | 13763.08 |
| 27 | 5 | 50 | 0.001 | 50% | 1 | 9819.33 |
| 28 | 5 | 50 | 0.001 | 50% | 2 | 29329.76 |
| 29 | 5 | 50 | 0.001 | - | 1 | 704.66 |
| 30 | 5 | 50 | 0.001 | - | 2 | 2601.87 |
| 31 | 5 | 50 | 0.01 | 20% | 1 | 824.07 |
| 32 | 5 | 50 | 0.01 | 20% | 2 | 11125.27 |
| 33 | 5 | 50 | 0.01 | 50% | 1 | 11438.29 |
| 34 | 5 | 50 | 0.01 | 50% | 2 | 27020.55 |
| 35 | 5 | 50 | 0.01 | - | 1 | 54975.26 |
| 36 | 5 | 50 | 0.01 | - | 2 | 3097.37 |
| 37 | 7 | 10 | 0.001 | 20% | 1 | 55481.10 |
| 38 | 7 | 10 | 0.001 | 20% | 2 | 16909.37 |
| 39 | 7 | 10 | 0.001 | 50% | 1 | 20101.65 |
| 40 | 7 | 10 | 0.001 | 50% | 2 | 40856.31 |
| 41 | 7 | 10 | 0.001 | - | 1 | 962.31 |
| 42 | 7 | 10 | 0.001 | - | 2 | 55515.60 |
| 43 | 7 | 10 | 0.01 | 20% | 1 | 55481.10 |
| 44 | 7 | 10 | 0.01 | 20% | 2 | 19731.17 |
| 45 | 7 | 10 | 0.01 | 50% | 1 | 17230.95 |

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|-----------|----------|-----------|-------------|----------|----------|---------------|
| 46 | 7 | 10 | 0.01 | 50% | 2 | 33340.80 |
| 47 | 7 | 10 | 0.01 | - | 1 | 502.95 |
| 48 | 7 | 10 | 0.01 | - | 2 | 55481.10 |
| 49 | 7 | 30 | 0.001 | 20% | 1 | 55481.10 |
| 50 | 7 | 30 | 0.001 | 20% | 2 | 16668.74 |
| 51 | 7 | 30 | 0.001 | 50% | 1 | 14801.79 |
| 52 | 7 | 30 | 0.001 | 50% | 1 | 34808.41 |
| 53 | 7 | 30 | 0.001 | - | 2 | 1470.13 |
| 54 | 7 | 30 | 0.001 | - | 1 | 2539.19 |
| 55 | 7 | 30 | 0.01 | 20% | 2 | 7298.23 |
| 56 | 7 | 30 | 0.01 | 20% | 1 | 14575.78 |
| 57 | 7 | 30 | 0.01 | 50% | 2 | 7880.00 |
| 58 | 7 | 30 | 0.01 | 50% | 1 | 26408.44 |
| 59 | 7 | 30 | 0.01 | - | 2 | 951.74 |
| 60 | 7 | 30 | 0.01 | - | 1 | 1360.84 |
| 61 | 7 | 50 | 0.001 | 20% | 2 | 5607.82 |
| 62 | 7 | 50 | 0.001 | 20% | 1 | 11161.42 |
| 63 | 7 | 50 | 0.001 | 50% | 2 | 17197.63 |
| 64 | 7 | 50 | 0.001 | 50% | 1 | 31307.02 |
| 65 | 7 | 50 | 0.001 | - | 2 | 511.15 |
| 66 | 7 | 50 | 0.001 | - | 1 | 2624.28 |
| 67 | 7 | 50 | 0.01 | 20% | 2 | 1790.67 |
| 68 | 7 | 50 | 0.01 | 20% | 1 | 14076.66 |
| 69 | 7 | 50 | 0.01 | 50% | 2 | 12236.72 |
| 70 | 7 | 50 | 0.01 | 50% | 1 | 37269.20 |
| 71 | 7 | 50 | 0.01 | - | 2 | 580.73 |
| 72 | 7 | 50 | 0.01 | - | 1 | 31047.93 |

Supplementary Table S2. The experiment results of validation process using 24 hyperparameters combinations for FPA.

| No. | Number of Timestep | Population size | Switch Probability | RMSE |
|----------|--------------------|-----------------|--------------------|---------------|
| 1 | 5 | 50 | 0.3 | 875.89 |
| 2 | 5 | 50 | 0.5 | 576.43 |
| 3 | 5 | 50 | 0.8 | 427.68 |
| 4 | 5 | 100 | 0.3 | 292.66 |
| 5 | 5 | 100 | 0.5 | 508.58 |
| 6 | 5 | 100 | 0.8 | 299.18 |
| 7 | 5 | 150 | 0.3 | 440.74 |
| 8 | 5 | 150 | 0.5 | 297.94 |
| 9 | 5 | 150 | 0.8 | 307.43 |
| 10 | 5 | 200 | 0.3 | 837.58 |
| 11 | 5 | 200 | 0.5 | 358.35 |
| 12 | 5 | 200 | 0.8 | 381.15 |
| 13 | 7 | 50 | 0.3 | 1291.64 |
| 14 | 7 | 50 | 0.5 | 336.70 |
| 15 | 7 | 50 | 0.8 | 337.89 |
| 16 | 7 | 100 | 0.3 | 343.20 |
| 17 | 7 | 100 | 0.5 | 367.40 |
| 18 | 7 | 100 | 0.8 | 322.39 |
| 19 | 7 | 150 | 0.3 | 523.00 |
| 20 | 7 | 150 | 0.5 | 331.45 |
| 21 | 7 | 150 | 0.8 | 319.14 |
| 22 | 7 | 200 | 0.3 | 471.08 |
| 23 | 7 | 200 | 0.5 | 319.15 |
| 24 | 7 | 200 | 0.8 | 345.33 |