|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | uirt | uirtComm | uirtSe | uirtSeComm | uirtSeCommLocation |  |
| RMSE  均方根误差 | 0.7893664973858239 | 0.7867297843260381 | 0.7870349493546486 | 0.7862335686049382 |  |  |
| MSE  均方误差 | 0.6230994671951638 | 0.618943753545694 | 0.6194240115056743 | 0.61816 3224401256 |  |  |
| MAE  平均绝对误差 | 0.608320049655068 | 0.6110891264145447 | 0.6074518737343042 | 0.6106450577242858 |  |  |
| MPE | 0.9875586598275674 | 0.9860307759467424 | 0.9862490450725745 | 0.9874495252646514 |  |  |
|  |  |  |  |  |  |  |

rec.iterator.maximum=1000

uirt 1000次 learnRate=0.001

17/11/25 16:35:05 INFO RecommenderJob: Evaluator value:MPE is 0.9864673141984066

17/11/25 16:35:05 INFO RecommenderJob: Evaluator value:MSE is 0.5860507057728918

17/11/25 16:35:05 INFO RecommenderJob: Evaluator value:RMSE is 0.7655394867496331

17/11/25 16:35:05 INFO RecommenderJob: Evaluator value:MAE is 0.5742032170400014

uirtCut

17/12/01 16:09:08 INFO RecommenderJob: Evaluator value:RMSE is 0.776081885421319

17/12/01 16:09:08 INFO RecommenderJob: Evaluator value:MSE is 0.6023030928791092

17/12/01 16:09:08 INFO RecommenderJob: Evaluator value:MAE is 0.5849509701743831

17/12/01 16:09:08 INFO RecommenderJob: Evaluator value:MPE is 0.9882134672050639

uirt 1000次 learnRate=0.01

17/11/25 16:49:37 INFO RecommenderJob: Evaluator value:RMSE is 0.8239799611560802

17/11/25 16:49:37 INFO RecommenderJob: Evaluator value:MAE is 0.6243929877409442

17/11/25 16:49:37 INFO RecommenderJob: Evaluator value:MSE is 0.6789429763867754

17/11/25 16:49:37 INFO RecommenderJob: Evaluator value:MPE is 0.987012987012987

uirtSeComm 1000次 learnRate=0.001

17/11/25 16:59:25 INFO RecommenderJob: Evaluator value:MPE is 0.9878860635163156

17/11/25 16:59:25 INFO RecommenderJob: Evaluator value:MSE is 0.58264718686492

17/11/25 16:59:25 INFO RecommenderJob: Evaluator value:RMSE is 0.7633132953544829

17/11/25 16:59:25 INFO RecommenderJob: Evaluator value:MAE is 0.5726211187682496

uirtSe 1000次 learnRate=0.001

17/11/25 17:17:50 INFO RecommenderJob: Evaluator value:MPE is 0.9860307759467424

17/11/25 17:17:50 INFO RecommenderJob: Evaluator value:MSE is 0.582894966501374

17/11/25 17:17:50 INFO RecommenderJob: Evaluator value:RMSE is 0.763475583434974

17/11/25 17:17:50 INFO RecommenderJob: Evaluator value:MAE is 0.5720777266717755

uirtSe12 1000次 learnRate=0.001

17/11/25 17:08:04 INFO RecommenderJob: Evaluator value:RMSE is 0.7629754781683814

17/11/25 17:08:04 INFO RecommenderJob: Evaluator value:MPE is 0.9871221215759031

17/11/25 17:08:04 INFO RecommenderJob: Evaluator value:MSE is 0.5821315802862703

17/11/25 17:08:04 INFO RecommenderJob: Evaluator value:MAE is 0.5721010210052543

uirtSe12Comm 1000次 learnRate=0.001

17/11/25 17:31:07 INFO RecommenderJob: Evaluator value:RMSE is 0.7628551503372427

17/11/25 17:31:07 INFO RecommenderJob: Evaluator value:MPE is 0.9875586598275674

17/11/25 17:31:07 INFO RecommenderJob: Evaluator value:MSE is 0.5819479803960572

17/11/25 17:31:07 INFO RecommenderJob: Evaluator value:MAE is 0.5724606474698947

uirtSe12CommLo 1000次 learnRate=0.001

17/11/26 17:55:07 INFO RecommenderJob: Evaluator value:RMSE is 0.7801140823071671

17/11/26 17:55:07 INFO RecommenderJob: Evaluator value:MPE is 0.9860231491592051

17/11/26 17:55:07 INFO RecommenderJob: Evaluator value:MSE is 0.6085779814139535

17/11/26 17:55:07 INFO RecommenderJob: Evaluator value:MAE is 0.580942104454545

17/11/26 23:05:11 INFO RecommenderJob: Evaluator value:MPE is 0.9860231491592051

17/11/26 23:05:11 INFO RecommenderJob: Evaluator value:MSE is 0.6085779814139535

17/11/26 23:05:11 INFO RecommenderJob: Evaluator value:RMSE is 0.7801140823071671

17/11/26 23:05:11 INFO RecommenderJob: Evaluator value:MAE is 0.580942104454545

1、增加se误差减小

2、增加comm误差减小

3、共同增加se与comm因素效果比单独增加效果要好

4、se12比se效果好

测试部分数据、全部数据

1000次 learnRate=0.001

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | uirt | uirtAll（shortTime）  f=10 | uirtAll（shortTime）  f=6 | uirtAll（longTime）  f=6 |  |  |  |  |  |
| MAE | 0.5742032170400014 | 0.5612101520364662 | 0.5612129909030651 | 0.6156068403922612 |  |  |  |  |  |
| RMSE | 0.7655394867496331 | 0.7493464919212053 | 0.7493523734689749 | **0.8159795074169488** |  |  |  |  |  |

验证维数设置

1000次 learnRate=0.001 rec.factor.number=k 部分数据：Hebei

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | UirtCuttime  K=0 |  | K=5 | K=6 | UirtCuttime  K=10 | UirtCuttime  K=20 | UirtCuttime  K=30 | UirtCuttime  K=40 |  | UirtCuttime  K=60 | UirtCuttime  K=80 |
| MAE | 0.5849442201214501 |  | 0.5849441074870917 | 0.5849654734085212 | 0.5849509701743831 | 0.5849539722225691 | 0.5849285644136392 |  |  | 0.5849127980022101 | 0.5848940637288564 |
| RMSE | 0.7760663270023307 |  | 0.7760568518240527 | 0.7761100059330385 | 0.776081885421319 | 0.7760706337776407 | 0.7759772178228939 |  |  | 0.7759684980320921 | 0.7759966277464561 |

1、季节实验—— 迭代1000次，learnRate=0.001 factor.number=6 allData

|  |  |  |  |
| --- | --- | --- | --- |
|  | Uirt | UirtSe | UirtSe12 |
| MAE | 0.5612129909030651 | 0.5603457314107018 | 0.5579229961700941 |
| RMSE | 0.7493523734689749 | 0.7508853044321885 | 0.7477991344301498 |

2、地理空间位置实验uirtLo——迭代1000次，learnRate=0.001，k=6

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | S=50km | S=100 | S=150 | S=200 | S=250 | S=300 | S=350 |
| MAE | 0.5908934419845591 | 0.5896813703689598 | **0.5783857631293508** | 0.5895101744783064 | 0.5893519315348377 | 0.589097873789304 |  |
| RMSE | 0.791516136385391 | 0.7900982133144928 | **0.7753486056539221** | 0.7900857063152396 | 0.7899106686183841 | 0.7899456417365278 |  |

3、对比实验证明因子的正相关性uirtLo——迭代1000次，learnRate=0.001，k=6 s=150km

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | uirt | UirtSe12 | UirtLo | UirtSe12Lo |
| MAE | 0.6156068403922612 | 0.5879229961700941 | 0.5783857631293508 | 0.5612101520364662 |
| RMSE | 0.8159795074169488 | 0.7677991344301498 | 0.7753486056539221 | 0.7493464919212053 |

4、uirtSe12Lo 维数最优值

