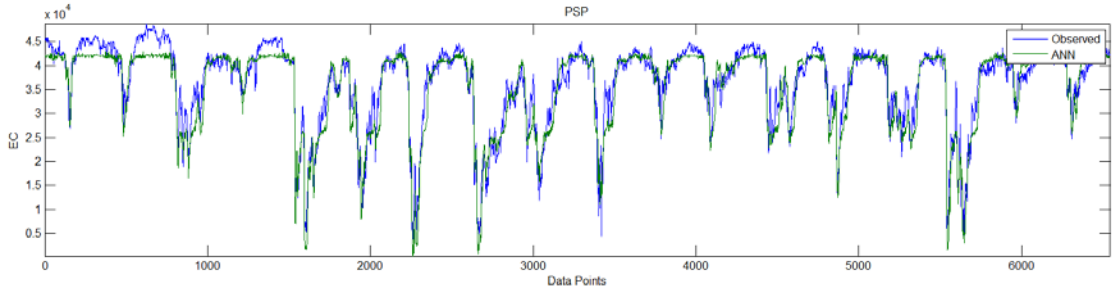
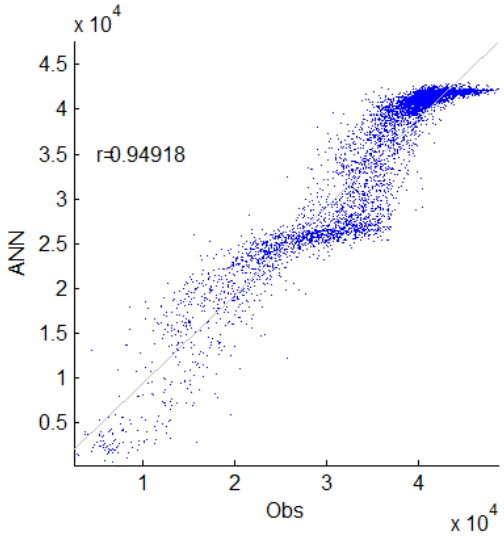
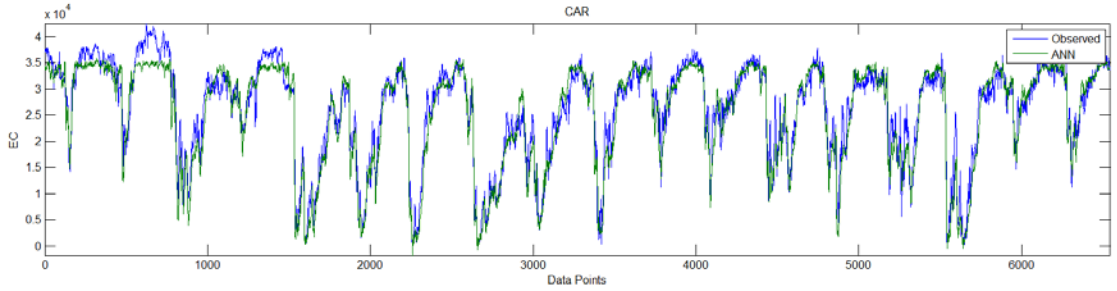
# APPENDIX D
# TRAINING RESULTS

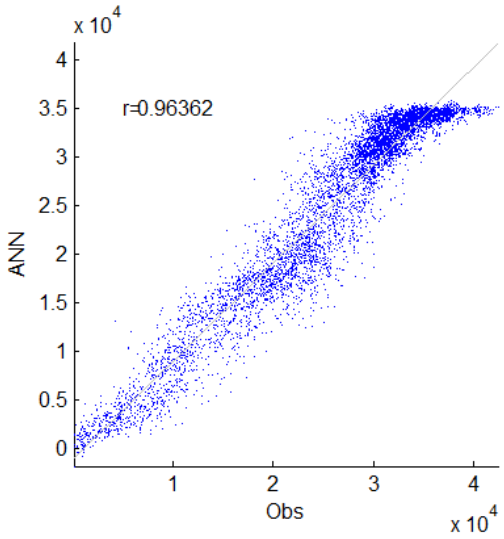
## MODEL 1

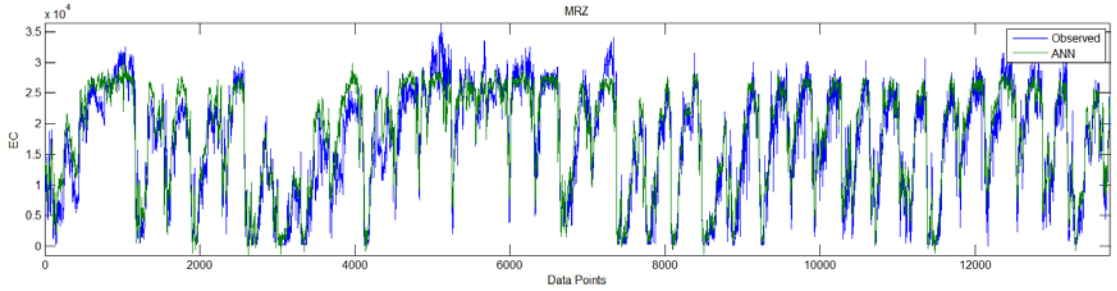
### *1 Flow*

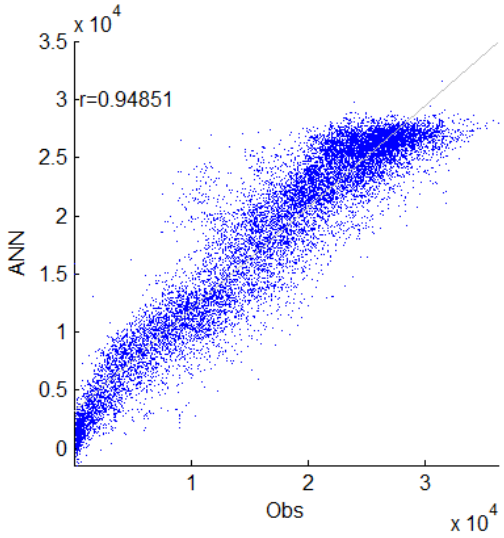


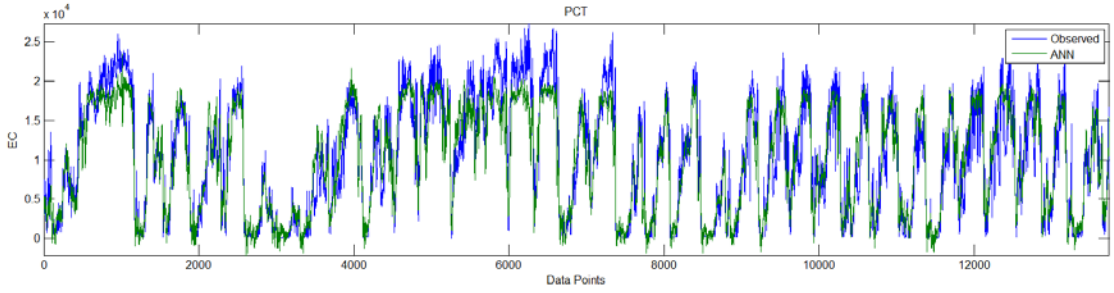



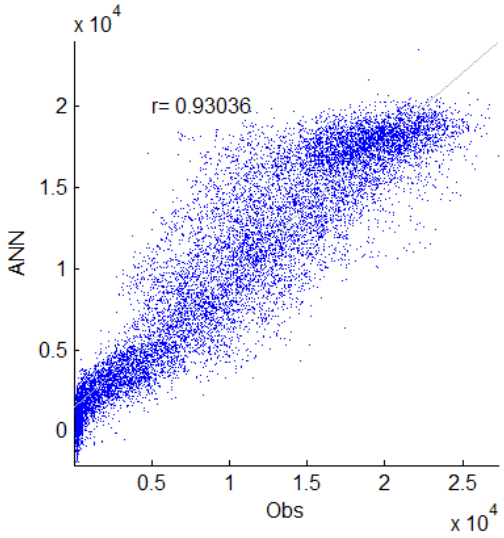

CAR
x 10^4
EC
Data Points
Observed
ANN

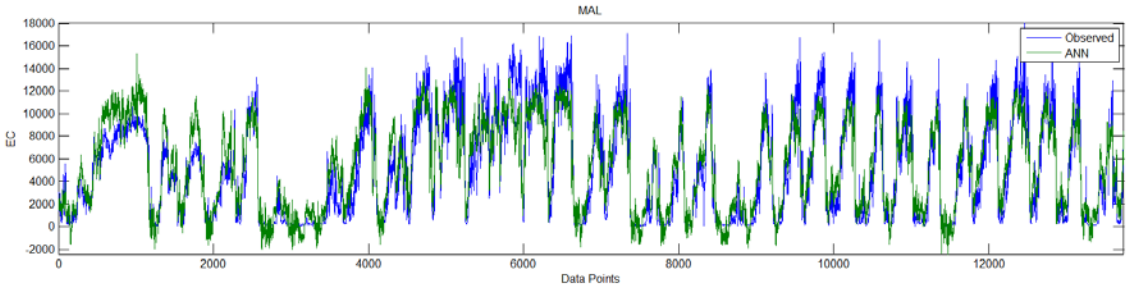

x 10^4
r=0.96362
ANN
Obs
x 10^4

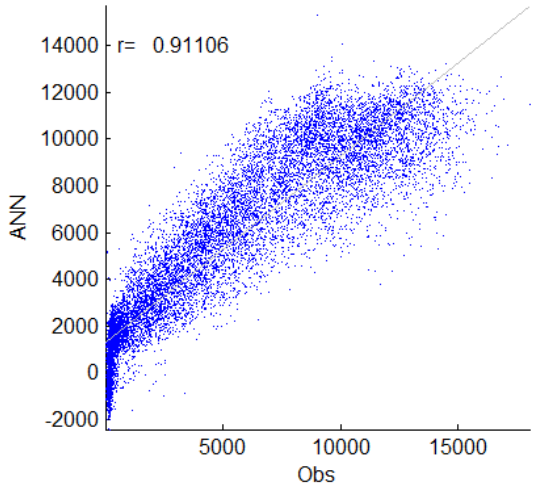

MRZ
x 10^4
EC
Data Points
Observed
ANN

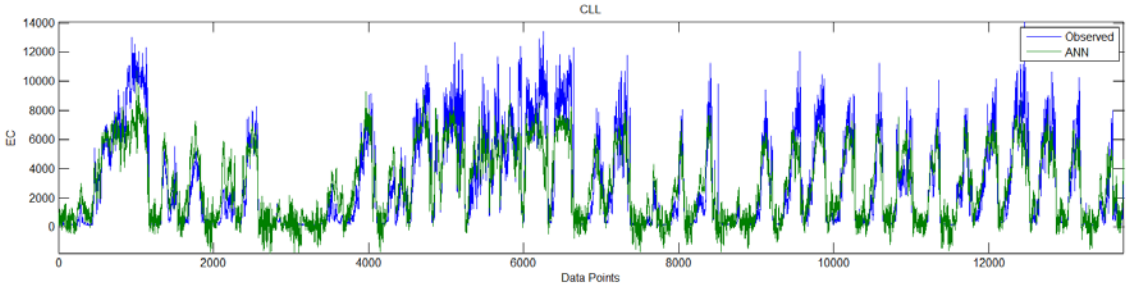

x 10^4
3.5
3
2.5
2
1.5
1
0.5
0
r=0.94851
ANN
1
2
3
Obs
x 10^4

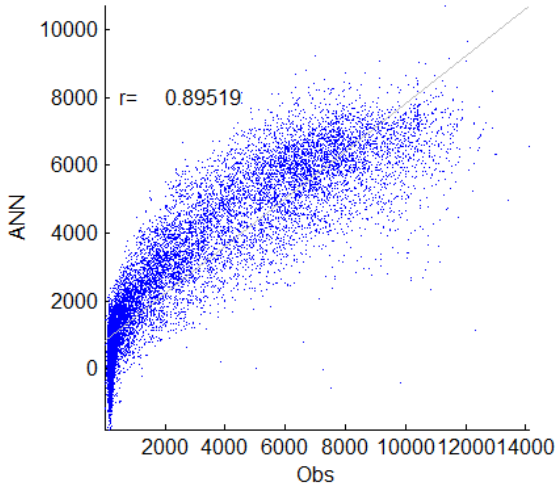

PCT
x 10^4
2.5
2
1.5
1
0.5
0
EC
0
2000
4000
6000
8000
10000
12000
Data Points
Observed
ANN

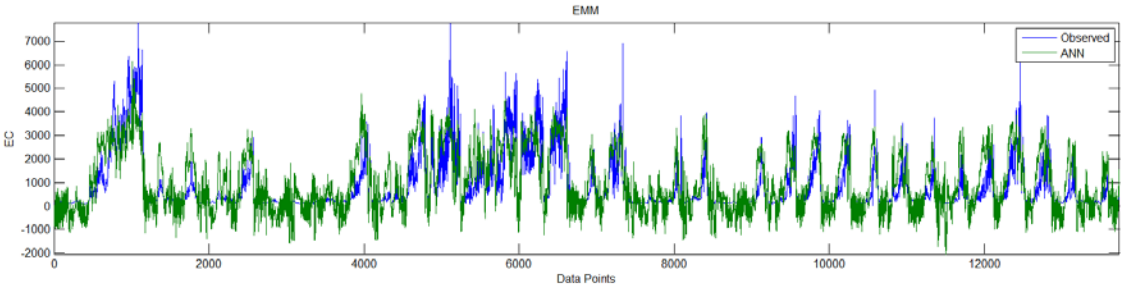

x 10^4
2
1.5
1
0.5
0
r= 0.93036
ANN
0.5
1
1.5
2
2.5
Obs
x 10^4

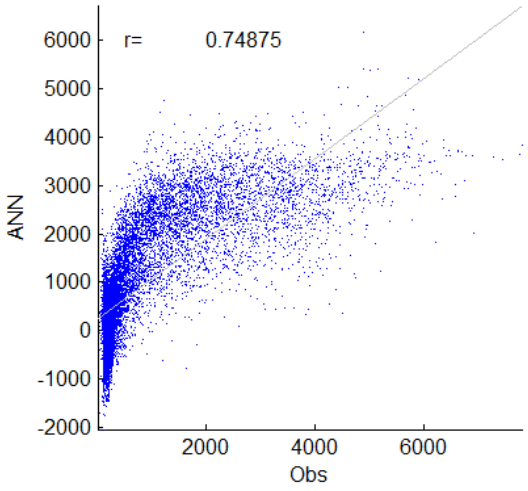

MAL
Observed
ANN
EC
Data Points

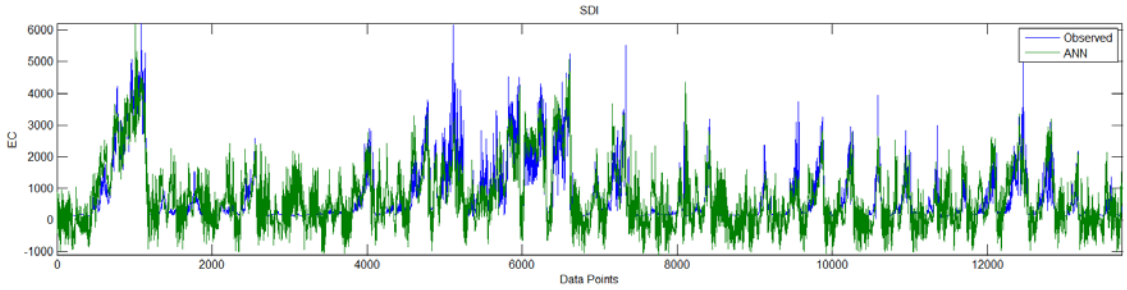

r= 0.91106
ANN
Obs

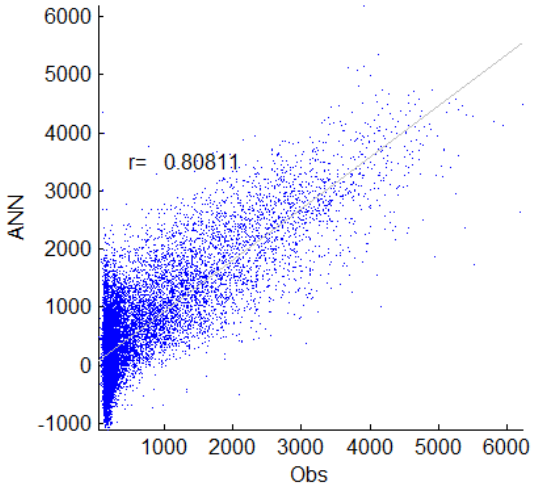

CLL
Observed
ANN
EC
Data Points

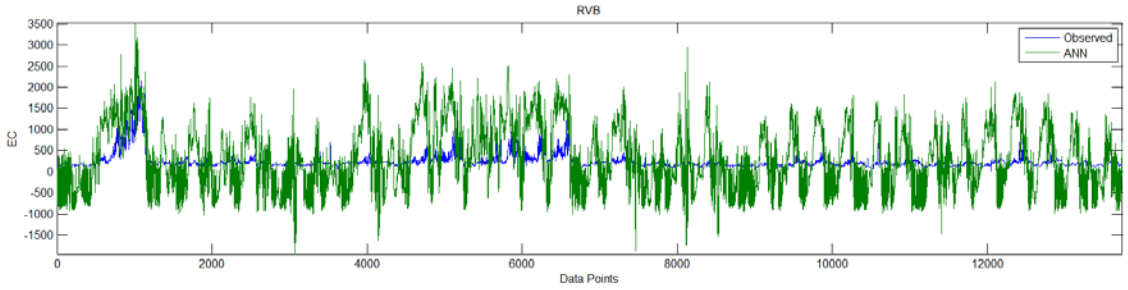

r= 0.89519
ANN
Obs
10000
8000
6000
4000
2000
0
2000 4000 6000 8000 10000 12000 14000

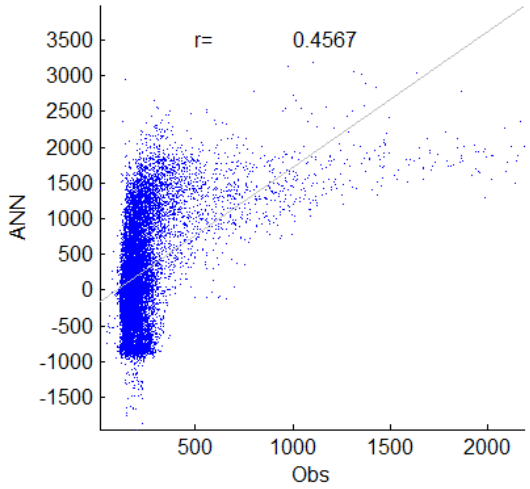

EMM
Observed
ANN
EC
Data Points
7000
6000
5000
4000
3000
2000
1000
0
-1000
-2000
0 2000 4000 6000 8000 10000 12000


r= 0.74875
ANN
Obs
6000
5000
4000
3000
2000
1000
0
-1000
-2000
2000 4000 6000


SDI
Observed
ANN
EC
Data Points
6000
5000
4000
3000
2000
1000
0
-1000
0
2000
4000
6000
8000
10000
12000

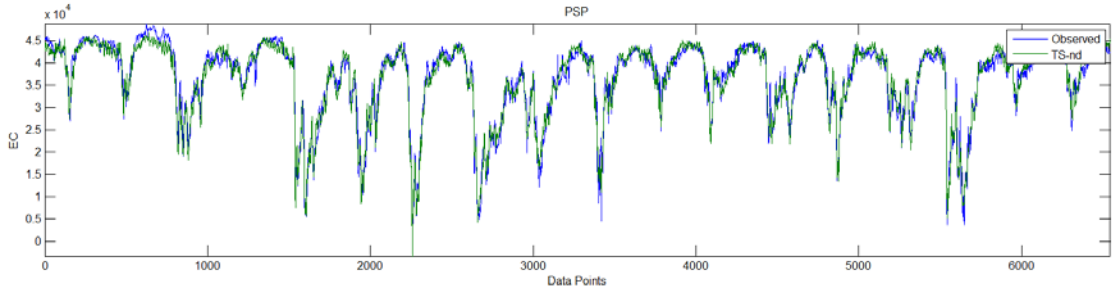

r= 0.80811
ANN
Obs
6000
5000
4000
3000
2000
1000
0
-1000
1000
2000
3000
4000
5000
6000

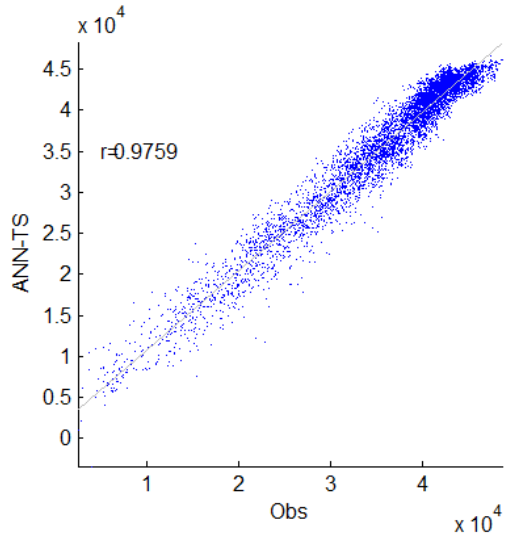

RVB
Observed
ANN
EC
Data Points
3500
3000
2500
2000
1500
1000
500
0
-500
-1000
-1500
0
2000
4000
6000
8000
10000
12000

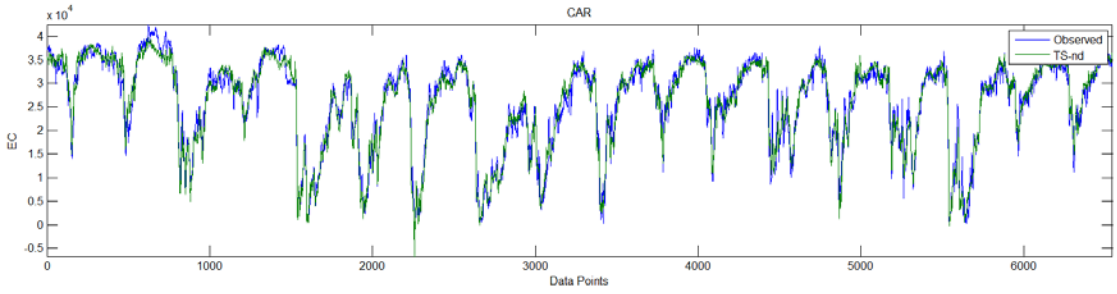

r= 0.4567
ANN
Obs
3500
3000
2500
2000
1500
1000
500
0
-500
-1000
-1500
500
1000
1500
2000

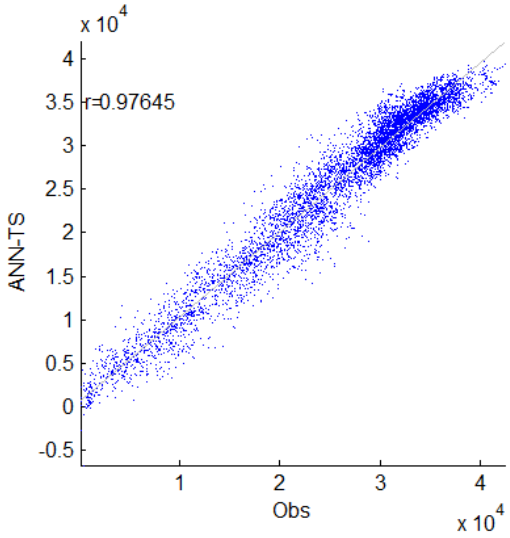
## MODEL 2

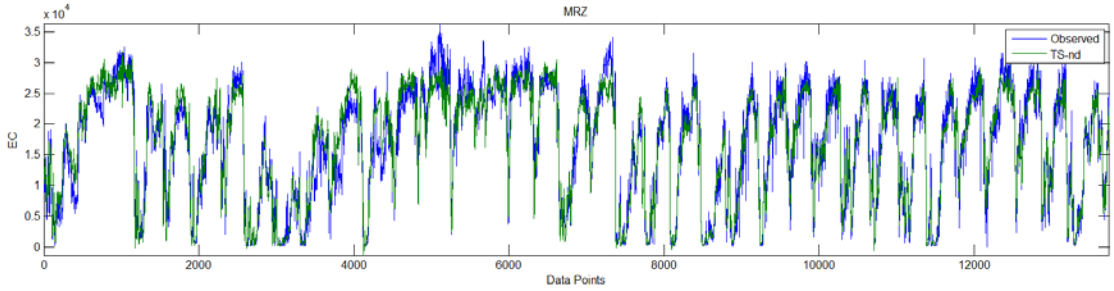
### *2 Flow*

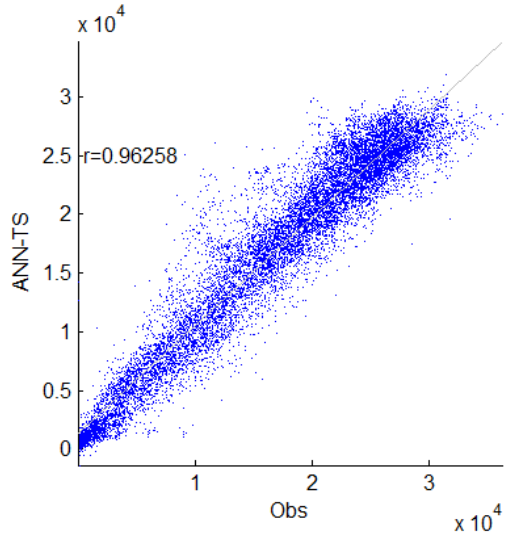


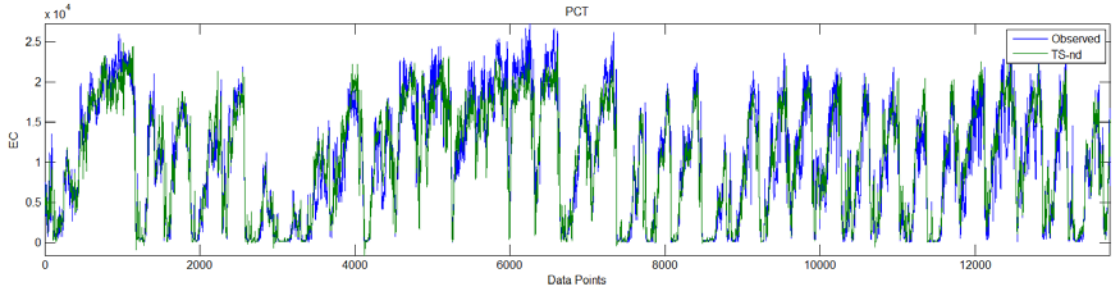



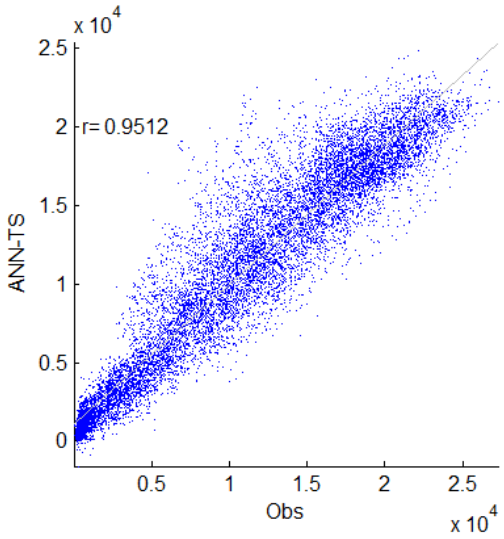



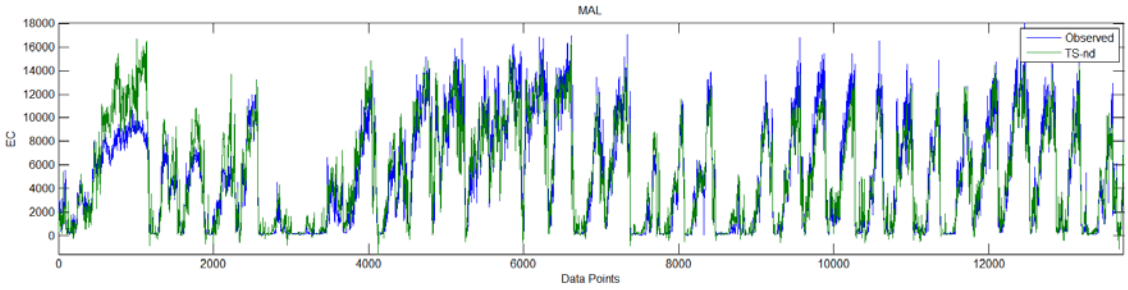

x 10^4
r=0.97645
ANN-TS
Obs
x 10^4

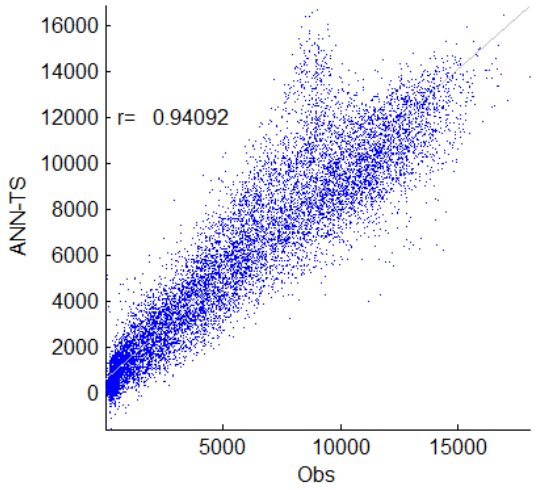

MRZ
x 10^4
EC
Data Points
Observed
TS-nd

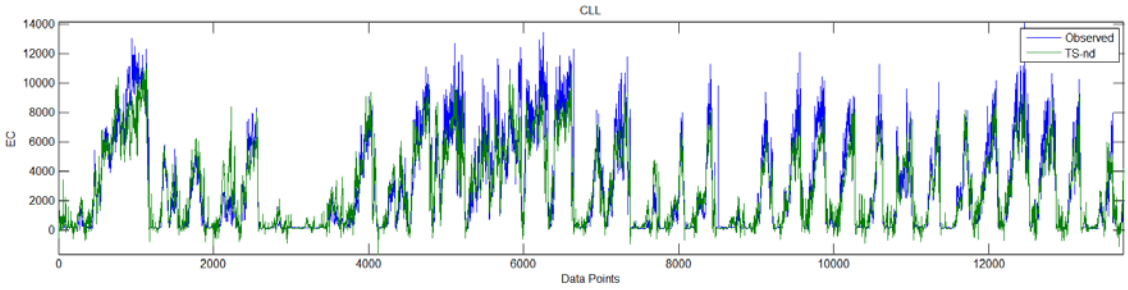

x 10^4
r=0.96258
ANN-TS
Obs
x 10^4

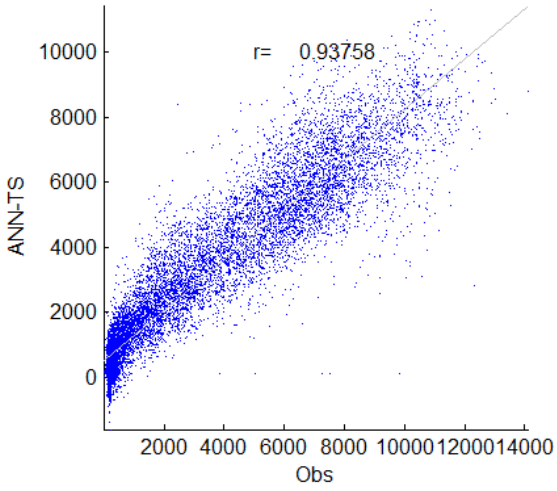

PCT
x 10^4
EC
Data Points
Observed
TS-nd

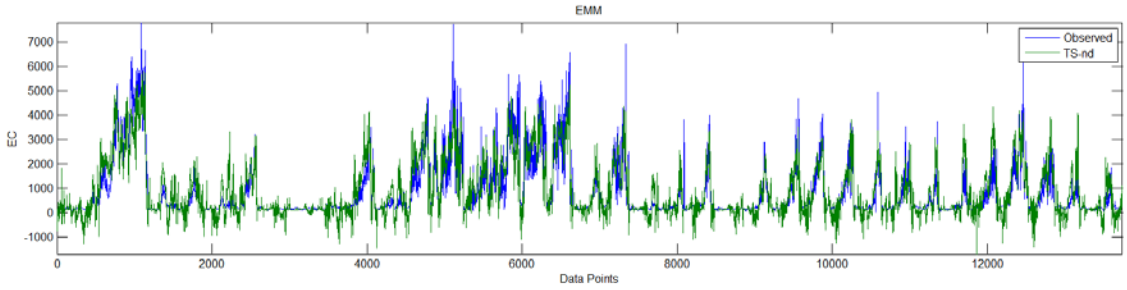

x 10^4
r= 0.9512
ANN-TS
Obs
x 10^4

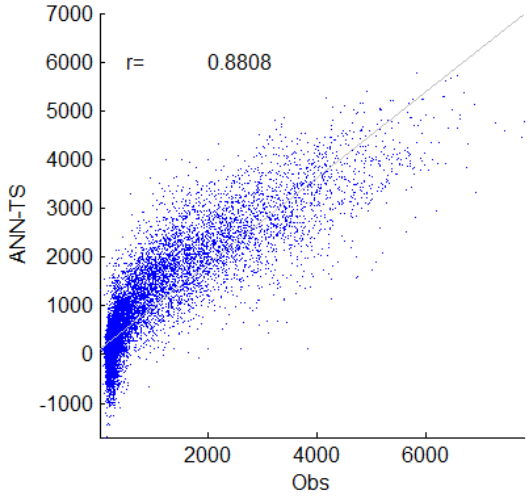

MAL
EC
Data Points
Observed
TS-nd

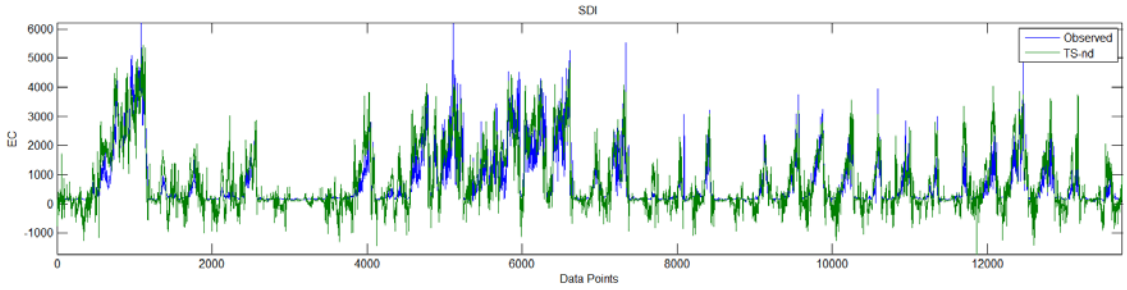

r= 0.94092
ANN-TS
Obs
16000
14000
12000
10000
8000
6000
4000
2000
0
5000
10000
15000

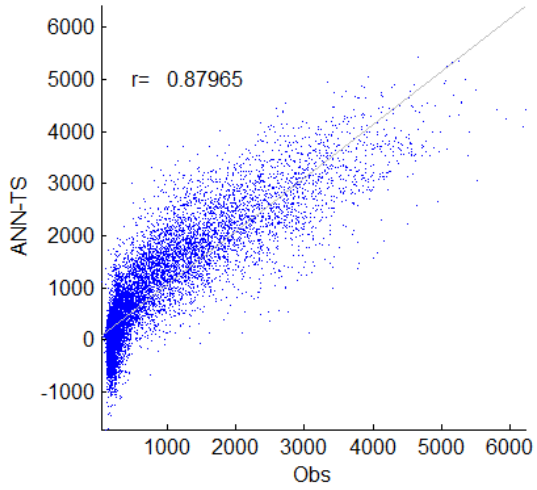

CLL
Observed
TS-nd
EC
Data Points
14000
12000
10000
8000
6000
4000
2000
0
0
2000
4000
6000
8000
10000
12000

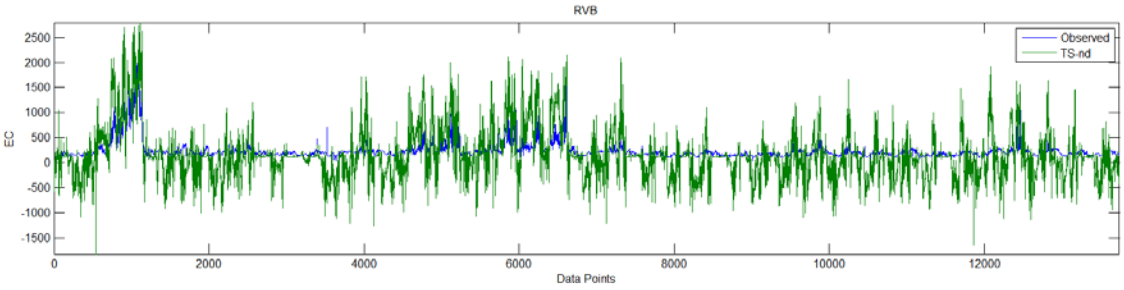

r= 0.93758
ANN-TS
Obs
10000
8000
6000
4000
2000
0
2000 4000 6000 8000 10000 12000 14000

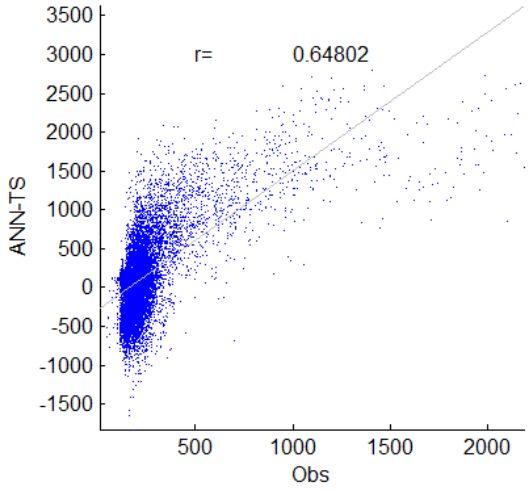

EMM
Observed
TS-nd
EC
Data Points


r= 0.8808
ANN-TS
Obs


SDI
Observed
TS-nd
EC
Data Points

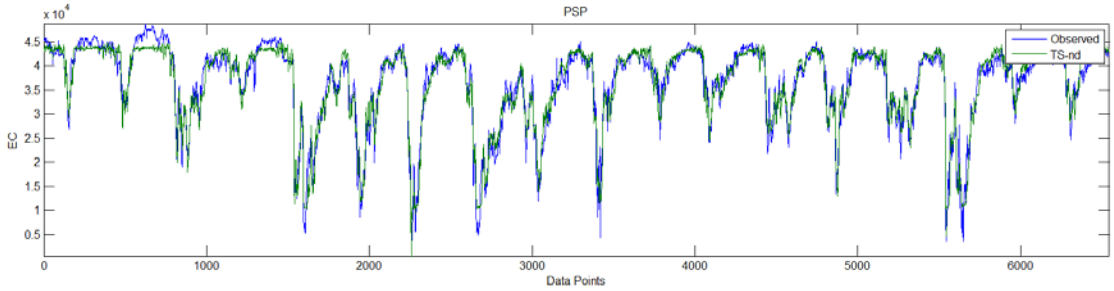

r= 0.87965
ANN-TS
Obs
6000
5000
4000
3000
2000
1000
0
-1000
1000 2000 3000 4000 5000 6000

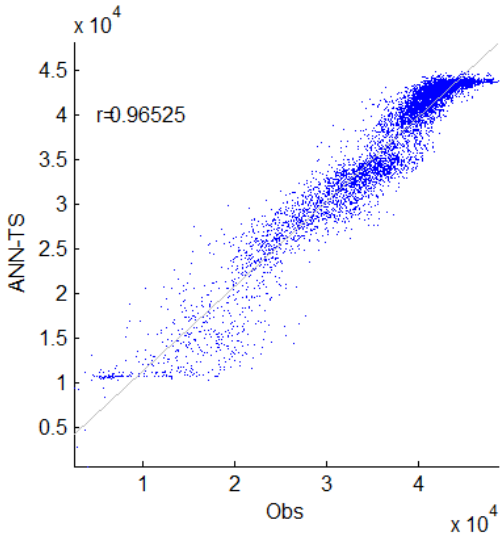

RVB
Observed
TS-nd
EC
Data Points
2500
2000
1500
1000
500
0
-500
-1000
-1500
0 2000 4000 6000 8000 10000 12000

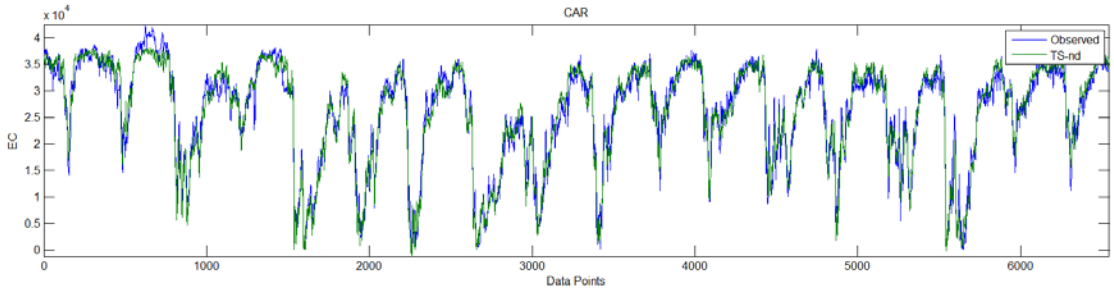

r= 0.64802
ANN-TS
Obs
3500
3000
2500
2000
1500
1000
500
0
-500
-1000
-1500
500 1000 1500 2000

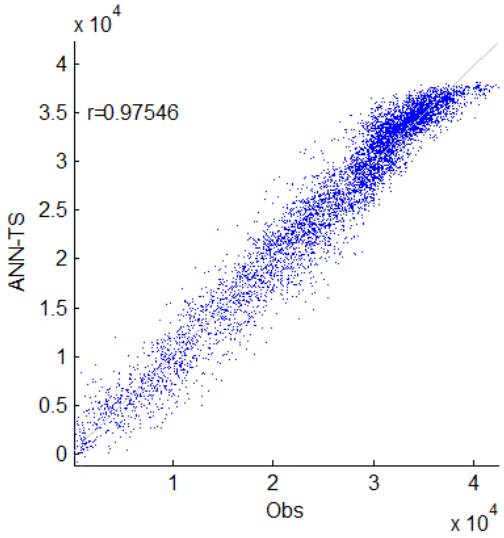
## MODEL 3

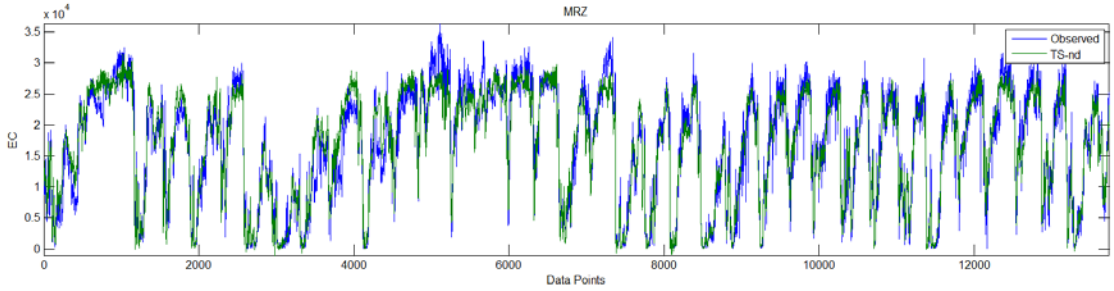
### *2 Flows, Qwest residual*

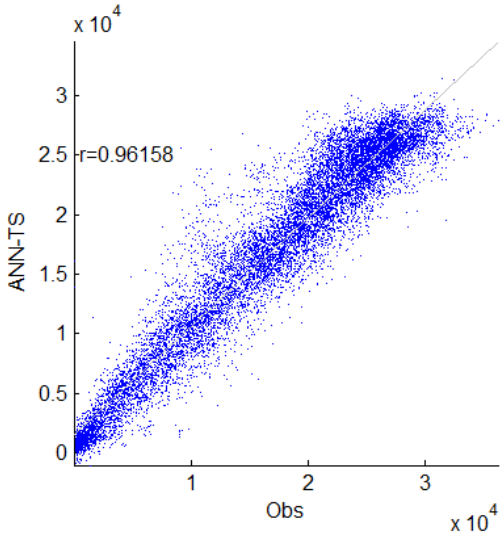


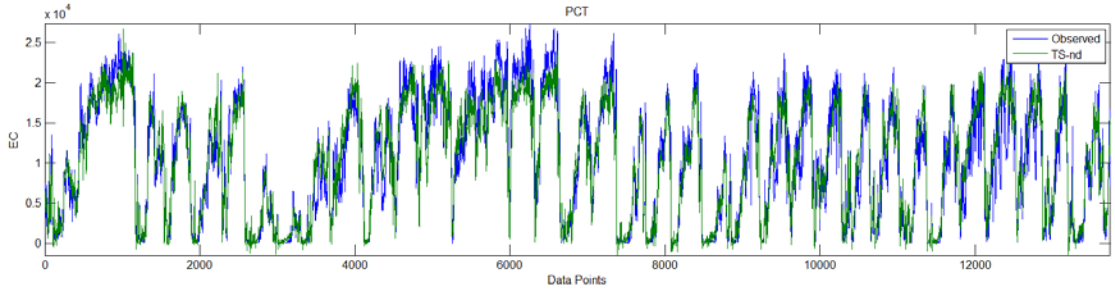



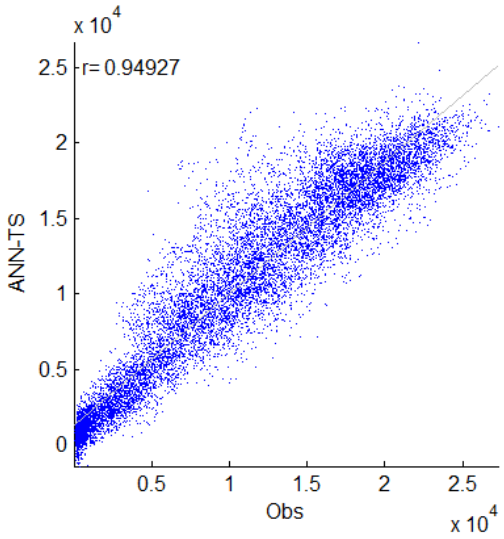



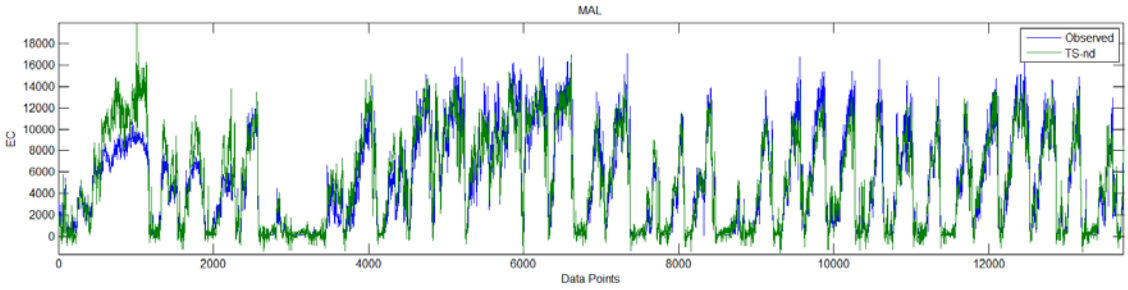

x 10^4
r=0.97546
ANN-TS
Obs
x 10^4

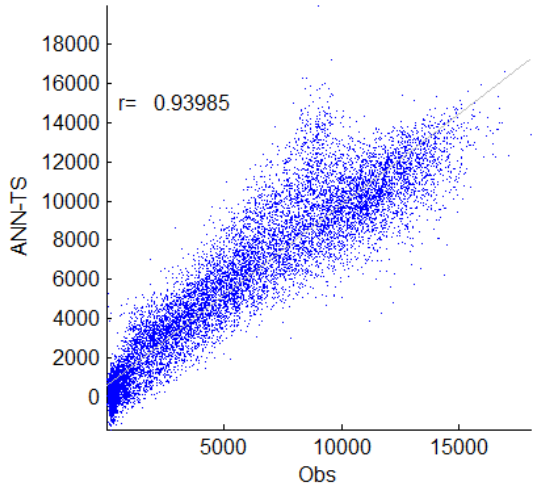

MRZ
Observed
TS-nd
EC
Data Points

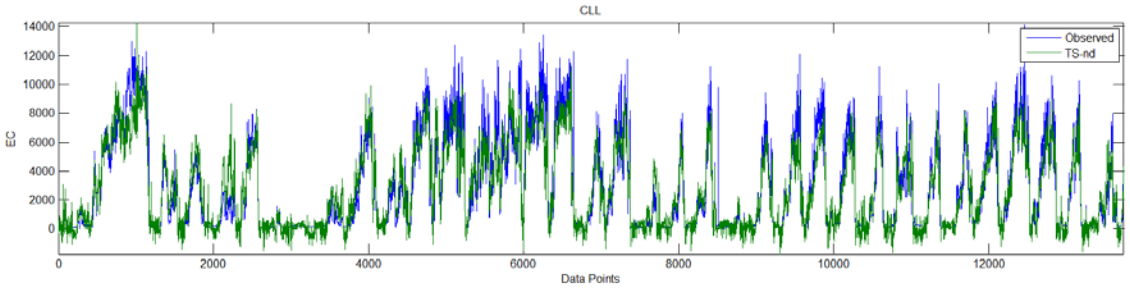

x 10^4
r=0.96158
ANN-TS
Obs
x 10^4

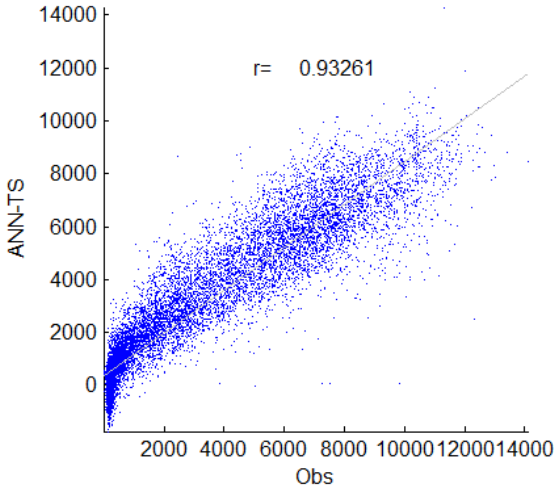

PCT
x 10^4
EC
Data Points
Observed
TS-nd

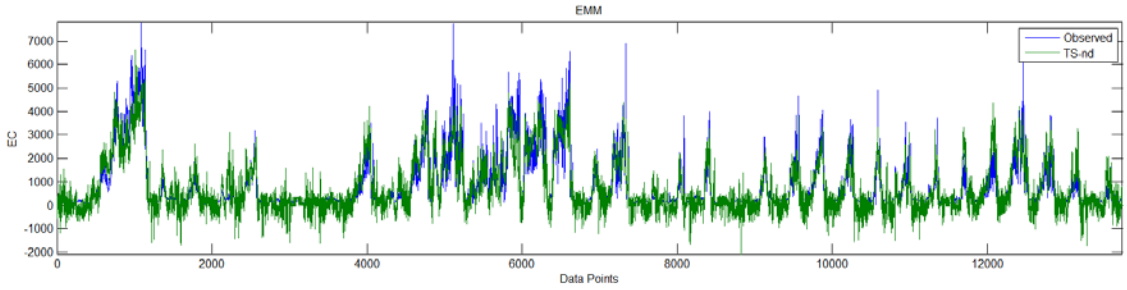

x 10^4
r= 0.94927
ANN-TS
Obs
x 10^4

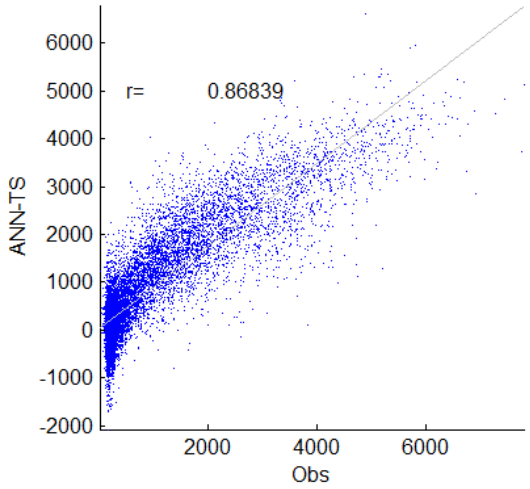

MAL
EC
Data Points
Observed
TS-nd

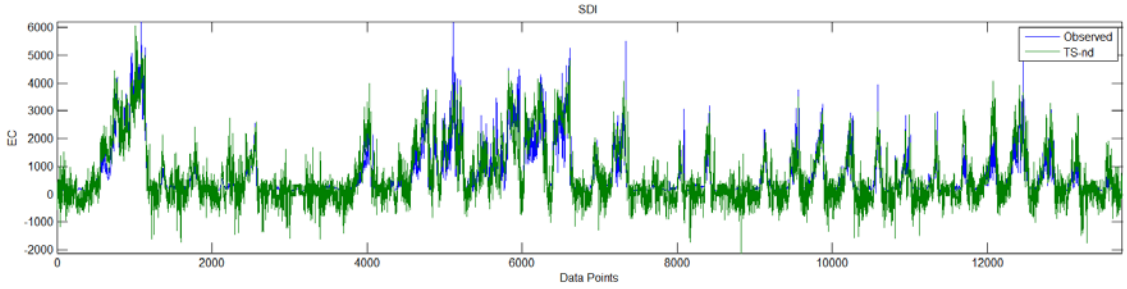

r= 0.93985
ANN-TS
Obs
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
5000
10000
15000

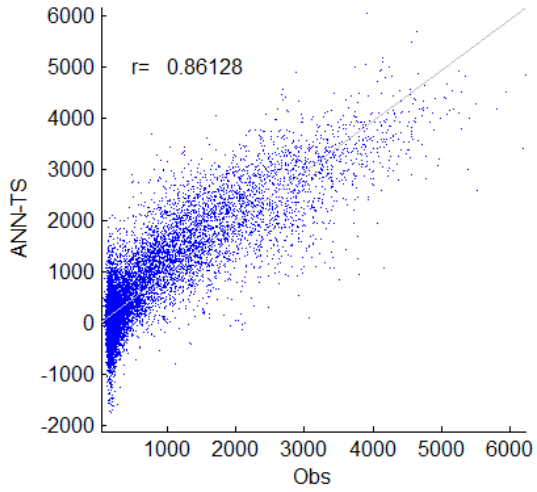

CLL
Observed
TS-nd
EC
Data Points
14000
12000
10000
8000
6000
4000
2000
0
0
2000
4000
6000
8000
10000
12000

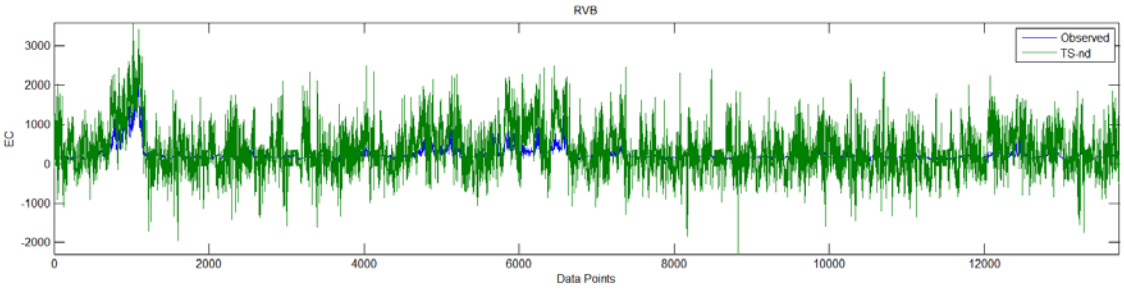

r= 0.93261
ANN-TS
Obs
14000
12000
10000
8000
6000
4000
2000
0
2000 4000 6000 8000 10000 12000 14000

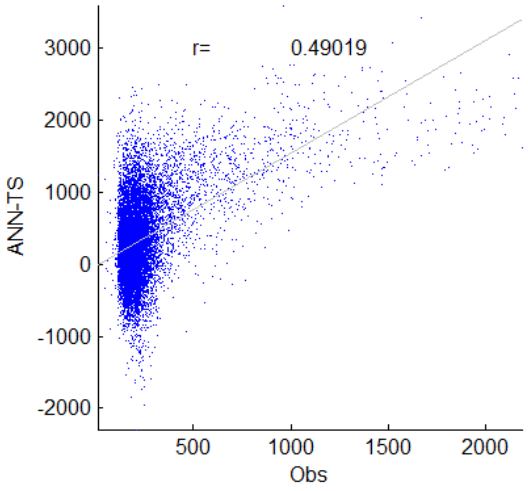

EMM
Observed
TS-nd
EC
Data Points


r= 0.86839
ANN-TS
Obs


SDI
Observed
TS-nd
EC
Data Points

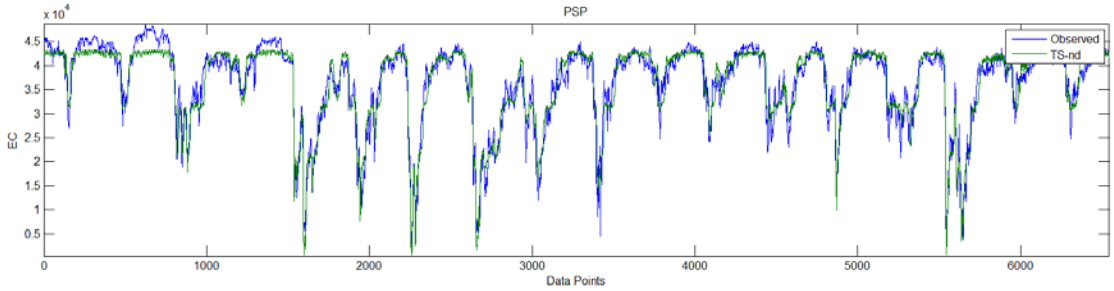

r= 0.86128
ANN-TS
Obs
6000
5000
4000
3000
2000
1000
0
-1000
-2000
1000 2000 3000 4000 5000 6000

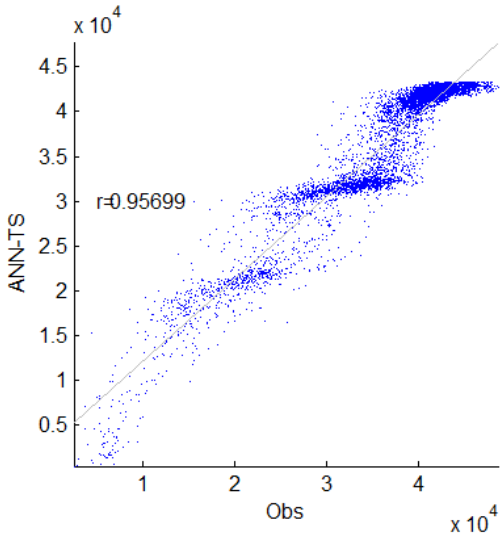

RVB
Observed
TS-nd
EC
Data Points
3000
2000
1000
0
-1000
-2000
0 2000 4000 6000 8000 10000 12000

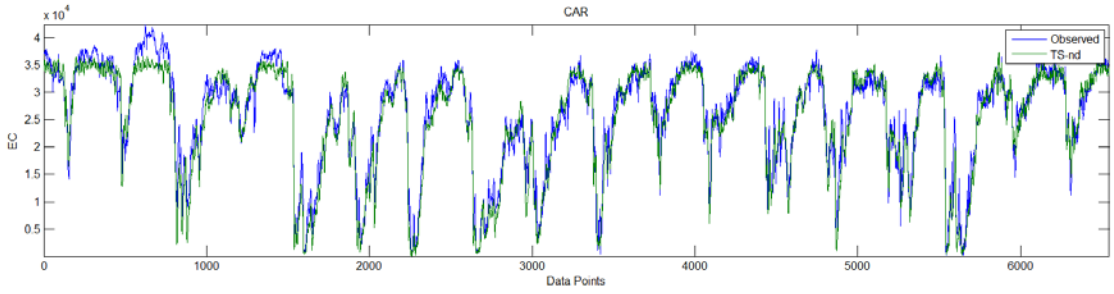

r= 0.49019
ANN-TS
Obs
3000
2000
1000
0
-1000
-2000
500 1000 1500 2000

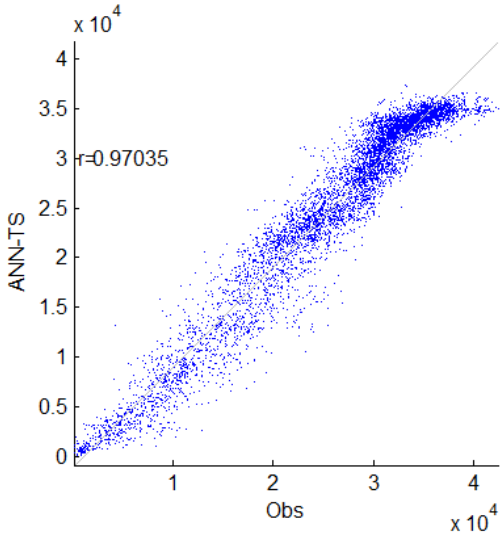
## MODEL 4

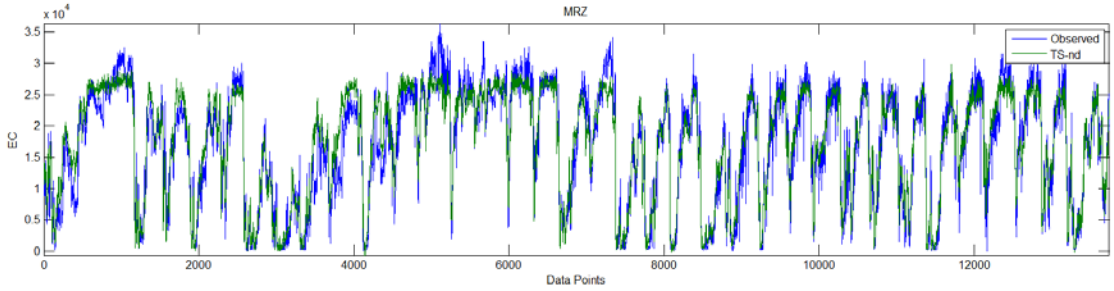
### *3 tides*

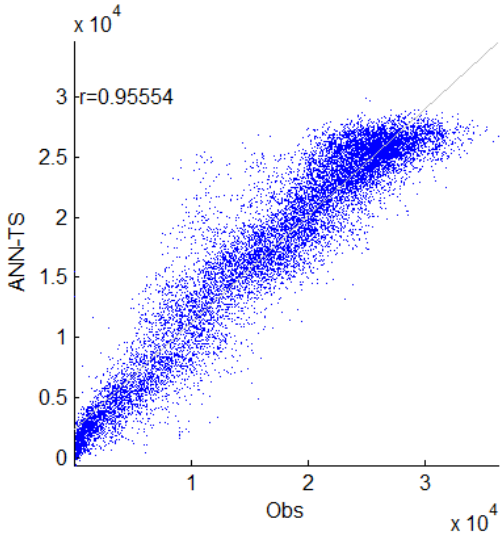


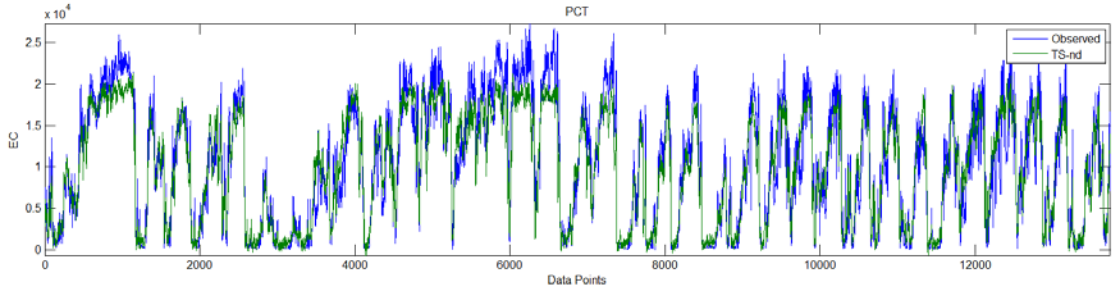



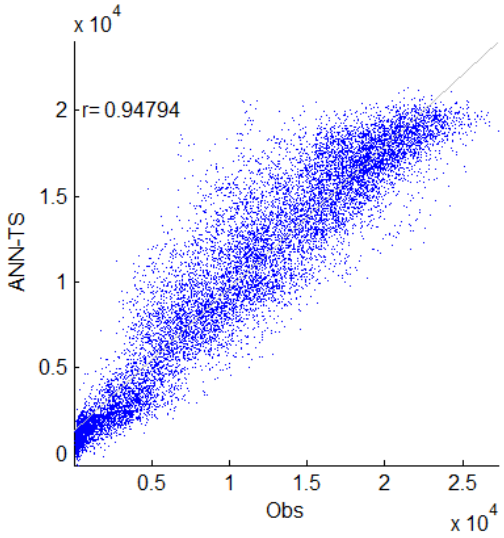



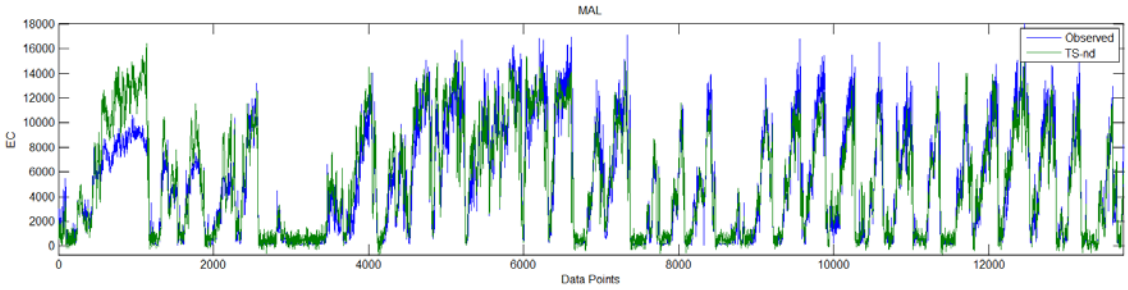

x 10^4
4
3.5
3
2.5
2
1.5
1
0.5
0
r=0.97035
ANN-TS
1
2
3
4
Obs
x 10^4

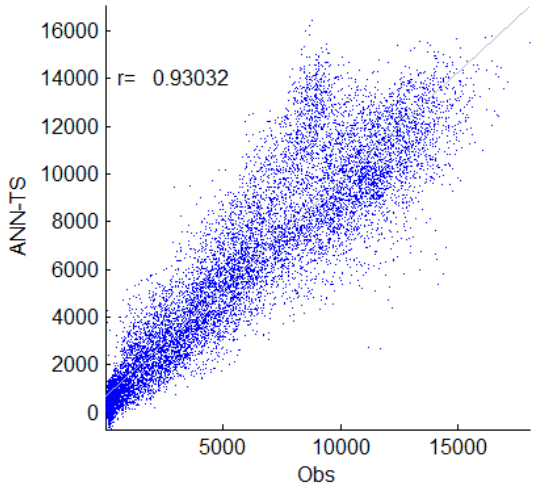

MRZ
x 10^4
EC
Observed
TS-nd
0
2000
4000
6000
8000
10000
12000
Data Points

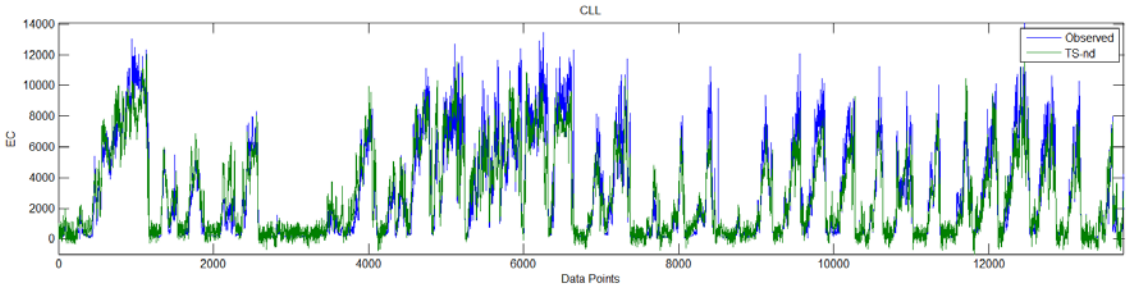

x 10^4
3
2.5
2
1.5
1
0.5
0
r=0.95554
ANN-TS
1
2
3
Obs
x 10^4

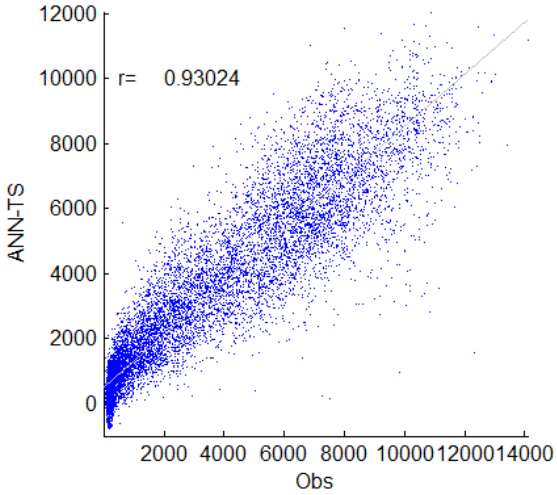

PCT
x 10^4
EC
Data Points
Observed
TS-nd

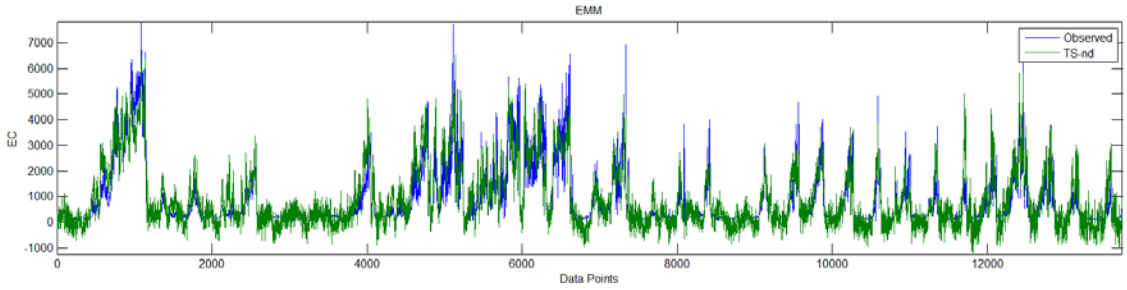

x 10^4
r= 0.94794
ANN-TS
Obs
x 10^4

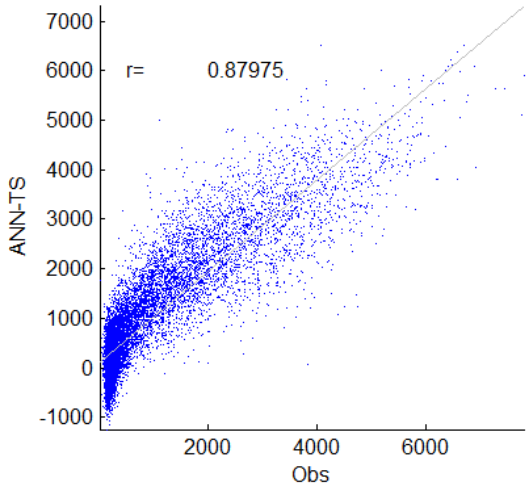

MAL
EC
Data Points
Observed
TS-nd

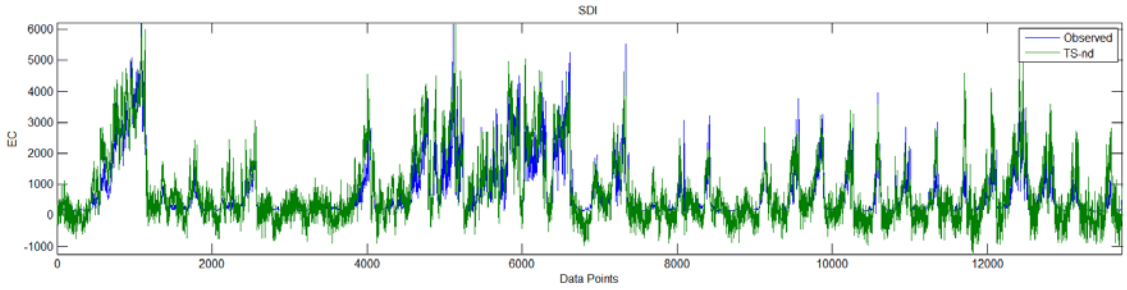

r= 0.93032
ANN-TS
Obs
0
2000
4000
6000
8000
10000
12000
14000
16000
5000
10000
15000

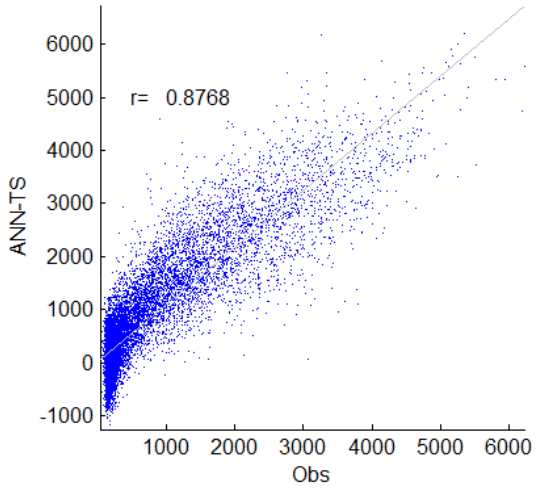

CLL
Observed
TS-nd
EC
Data Points
0
2000
4000
6000
8000
10000
12000
14000

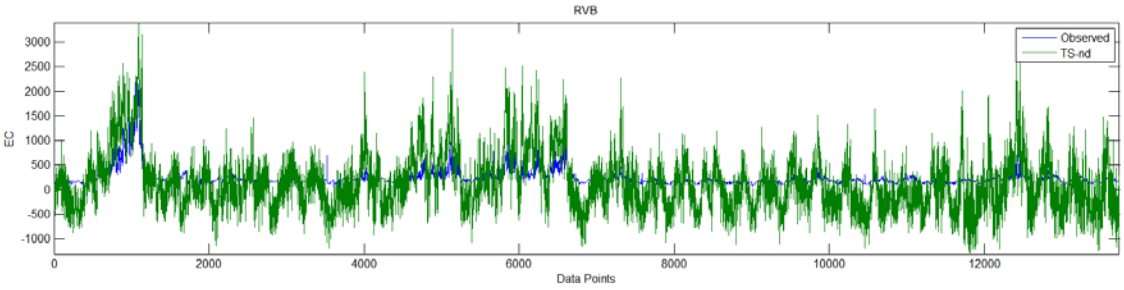

r= 0.93024
ANN-TS
Obs
0
2000
4000
6000
8000
10000
12000
14000

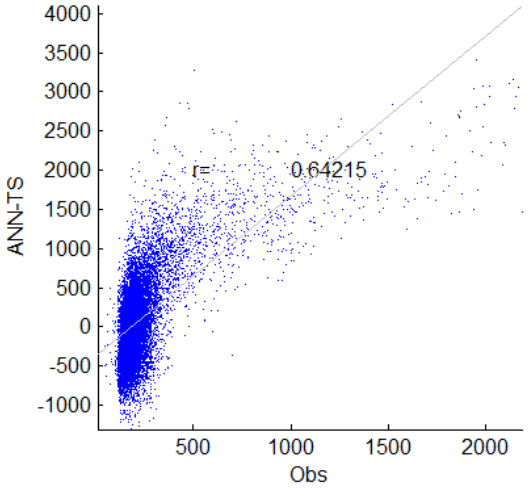

EMM
Observed
TS-nd
EC
Data Points


r= 0.87975
ANN-TS
Obs


SDI
Observed
TS-nd
EC
Data Points

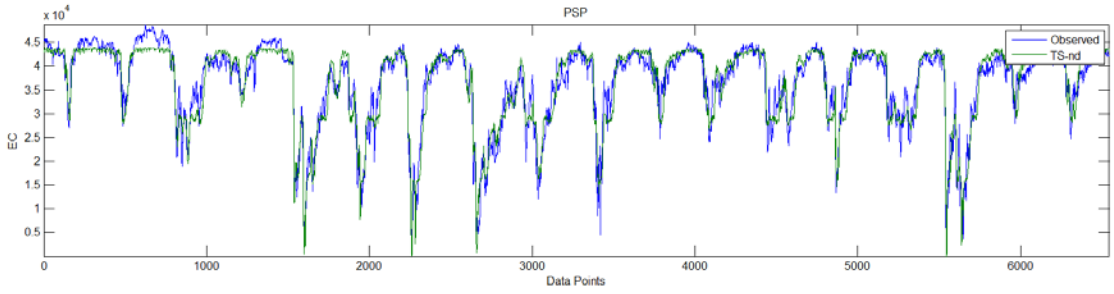

r= 0.8768
ANN-TS
Obs
6000
5000
4000
3000
2000
1000
0
-1000
1000 2000 3000 4000 5000 6000

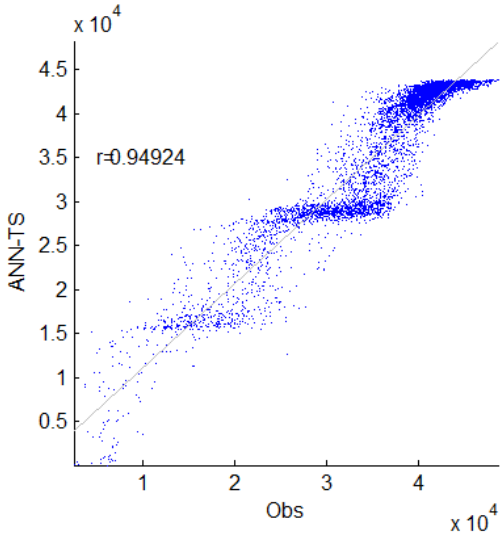

RVB
Observed
TS-nd
EC
Data Points
3000
2500
2000
1500
1000
500
0
-500
-1000
0 2000 4000 6000 8000 10000 12000

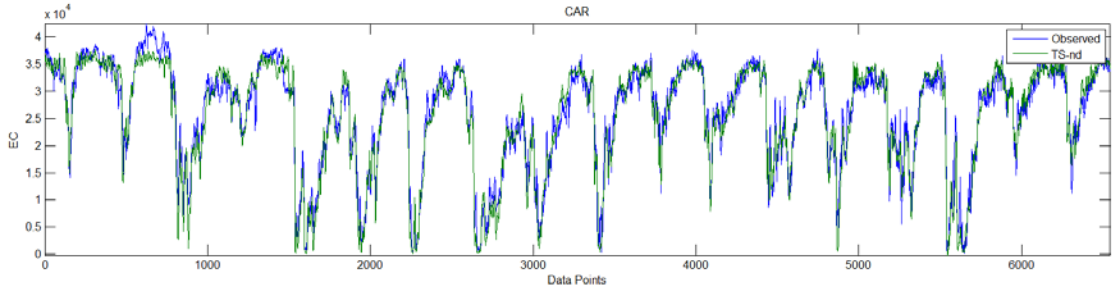

r= 0.64215
ANN-TS
Obs
4000
3500
3000
2500
2000
1500
1000
500
0
-500
-1000
500 1000 1500 2000

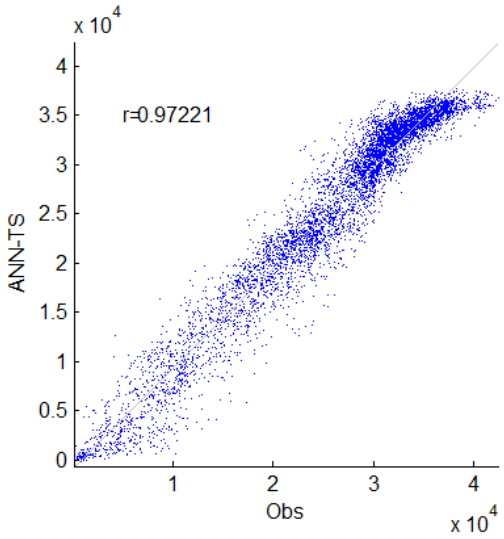
## MODEL 5

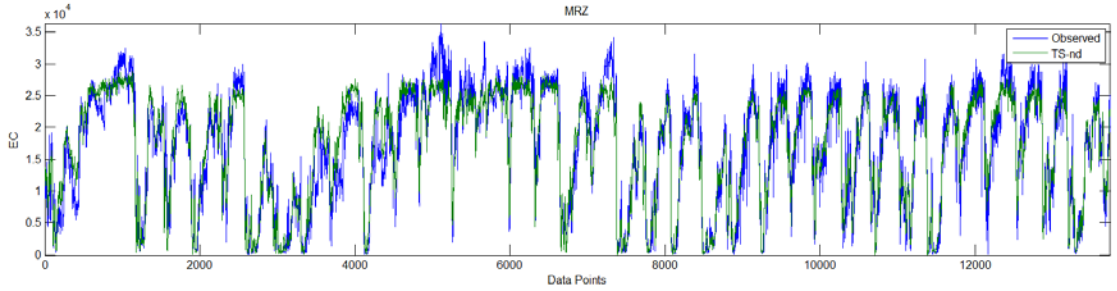
### *2 Tide*

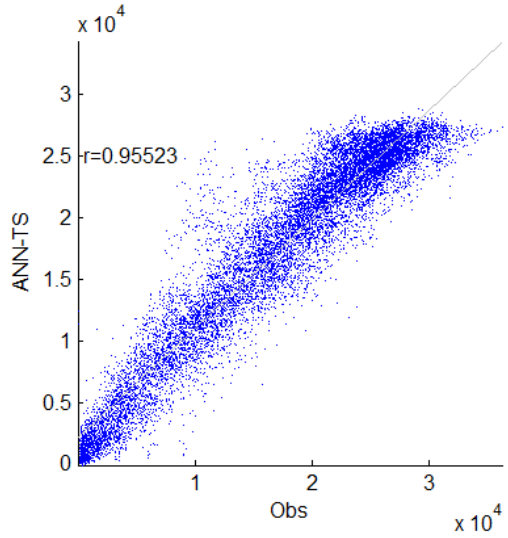


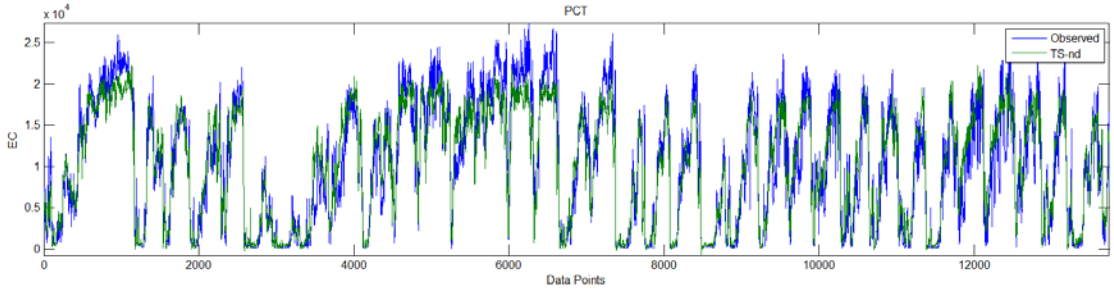



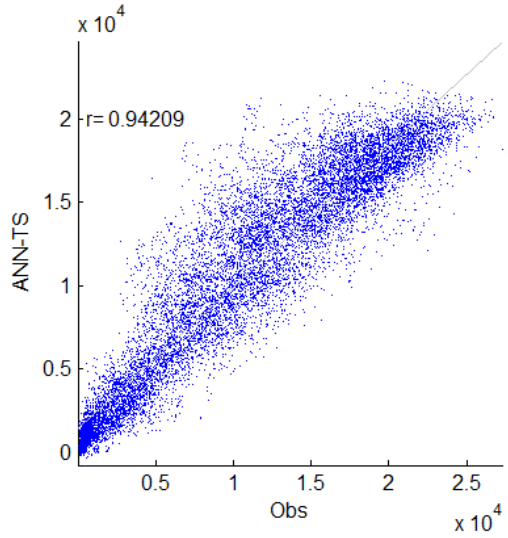

CAR
x 10^4
EC
Data Points
Observed
TS-nd

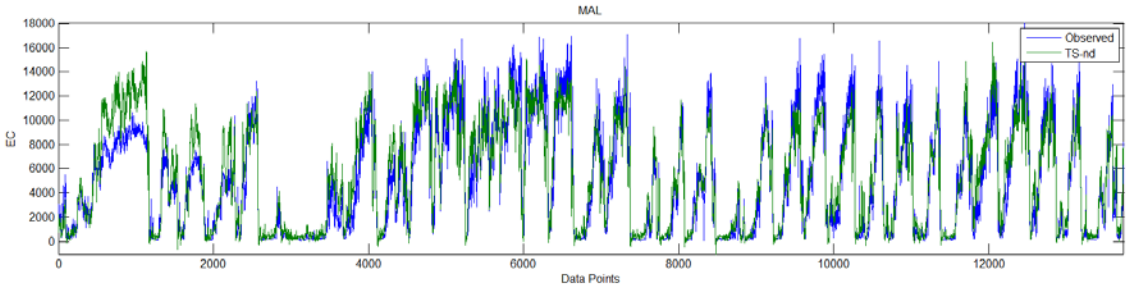

x 10^4
r=0.97221
ANN-TS
Obs
x 10^4

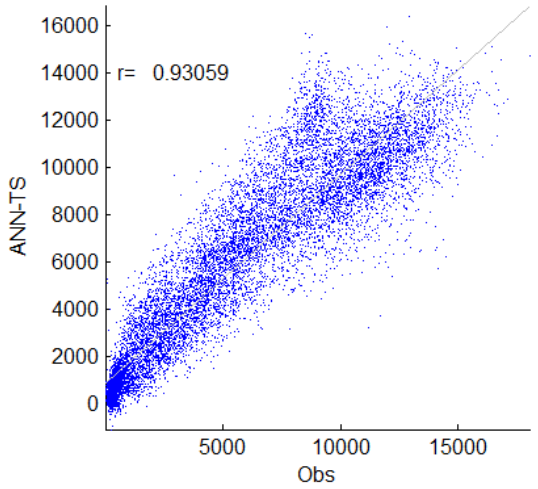

MRZ
x 10^4
EC
Data Points
Observed
TS-nd

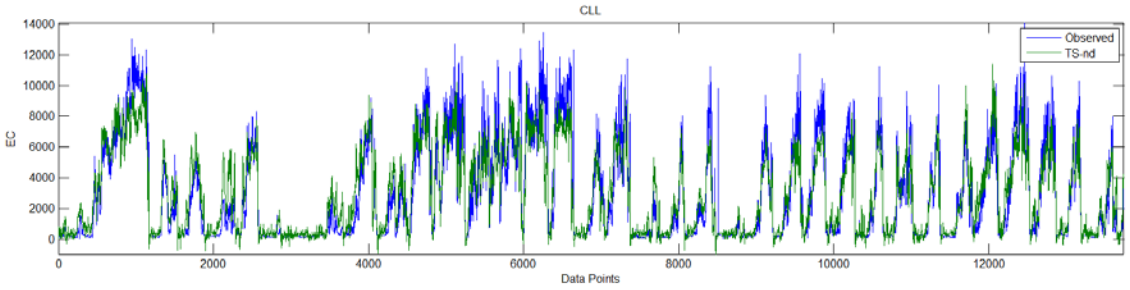

x 10^4
r=0.95523
ANN-TS
Obs
x 10^4

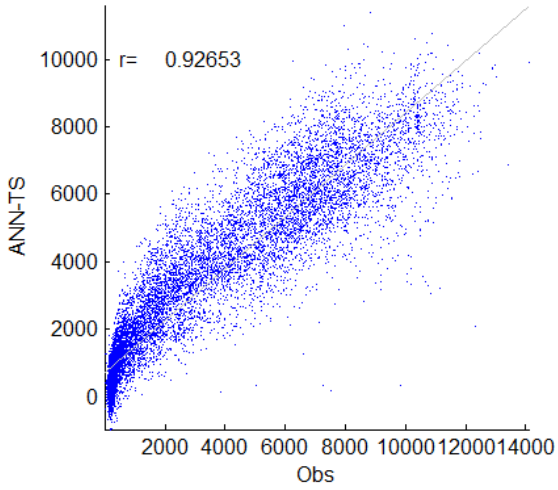

PCT
Observed
TS-nd
EC
Data Points

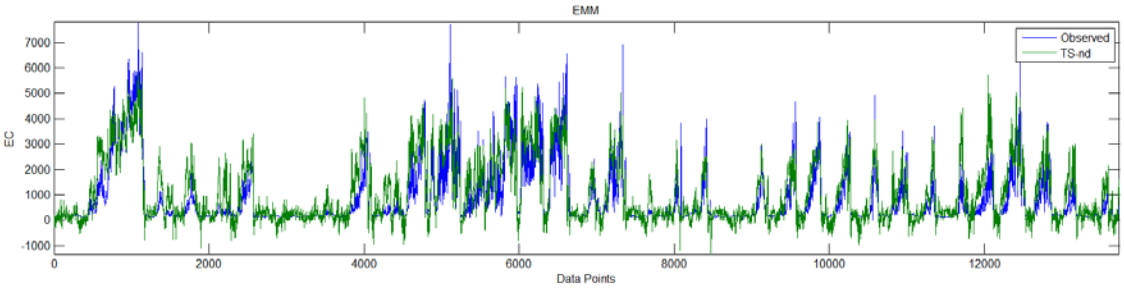

x 10^4
r= 0.94209
ANN-TS
Obs
x 10^4

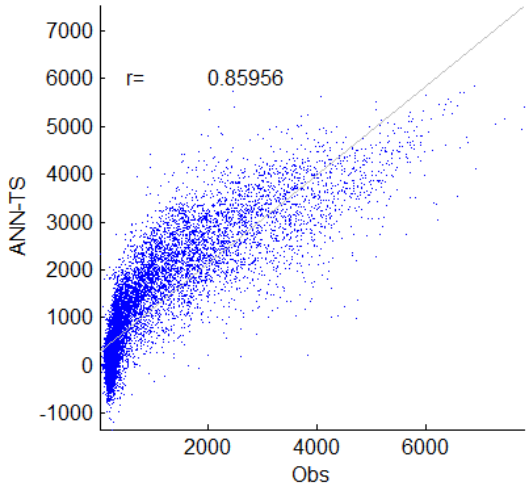

MAL
Observed
TS-nd
EC
Data Points

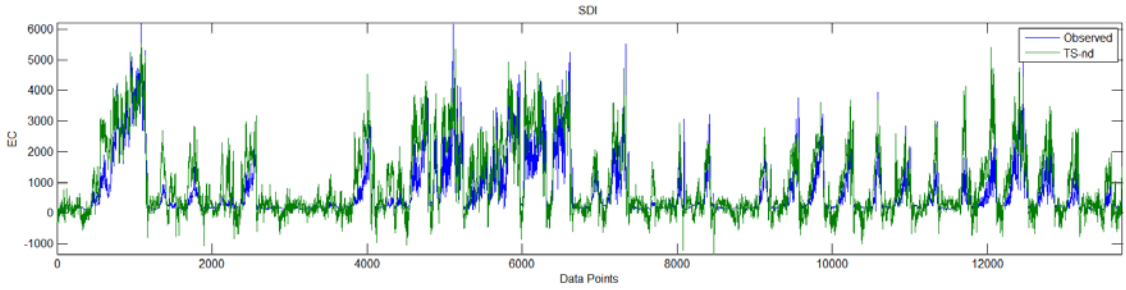

r= 0.93059
ANN-TS
Obs

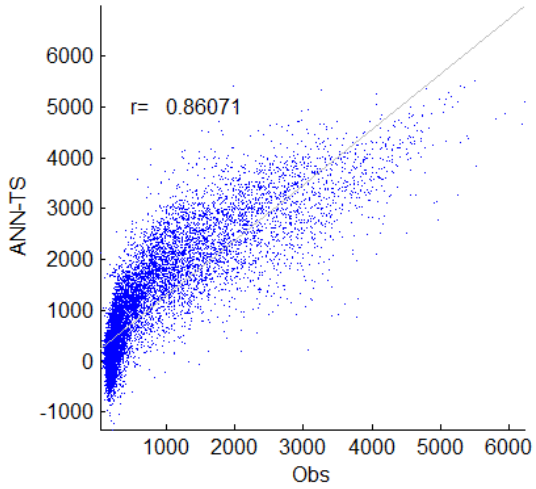

CLL
Observed
TS-nd
EC
Data Points

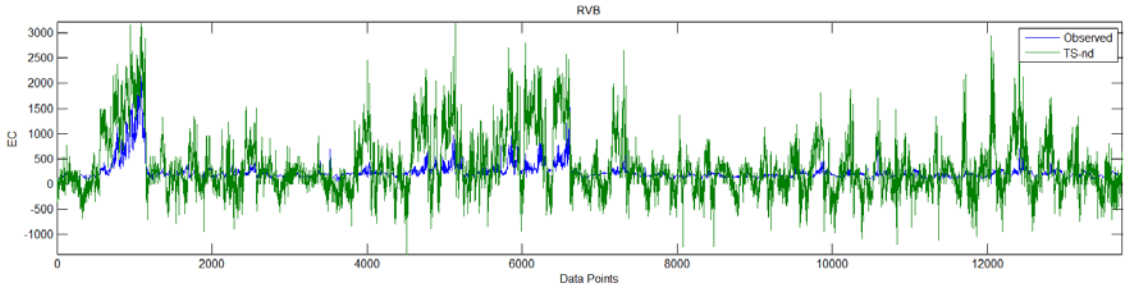

r= 0.92653
ANN-TS
Obs
10000
8000
6000
4000
2000
0
2000 4000 6000 8000 10000 12000 14000

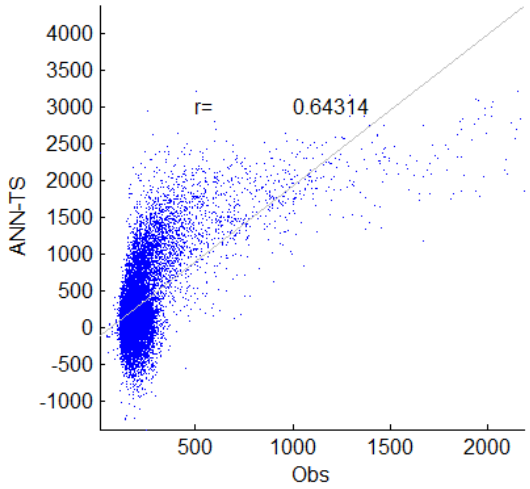

EMM
Observed
TS-nd
EC
Data Points
7000
6000
5000
4000
3000
2000
1000
0
-1000
0 2000 4000 6000 8000 10000 12000


r= 0.85956
ANN-TS
Obs
7000
6000
5000
4000
3000
2000
1000
0
-1000
2000 4000 6000


SDI
Observed
TS-nd
EC
Data Points
6000
5000
4000
3000
2000
1000
0
-1000
0
2000
4000
6000
8000
10000
12000

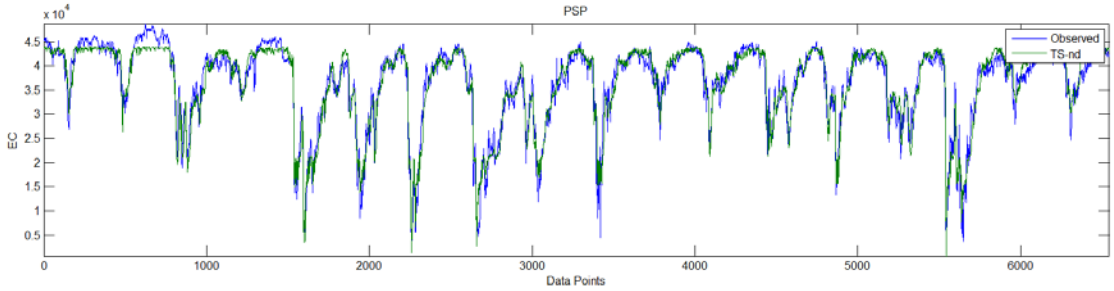

r= 0.86071
ANN-TS
Obs
6000
5000
4000
3000
2000
1000
0
-1000
1000
2000
3000
4000
5000
6000

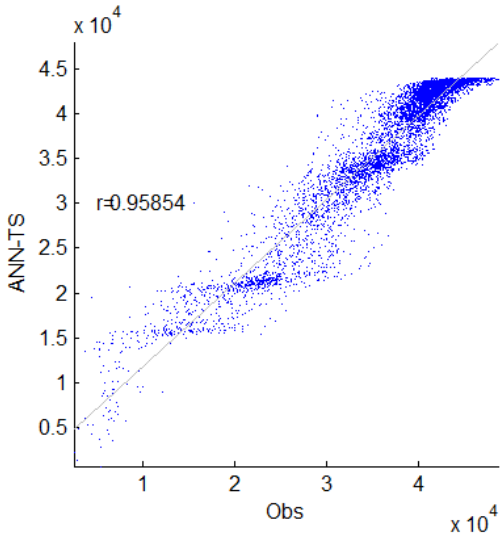

RVB
Observed
TS-nd
EC
Data Points
3000
2500
2000
1500
1000
500
0
-500
-1000
0
2000
4000
6000
8000
10000
12000

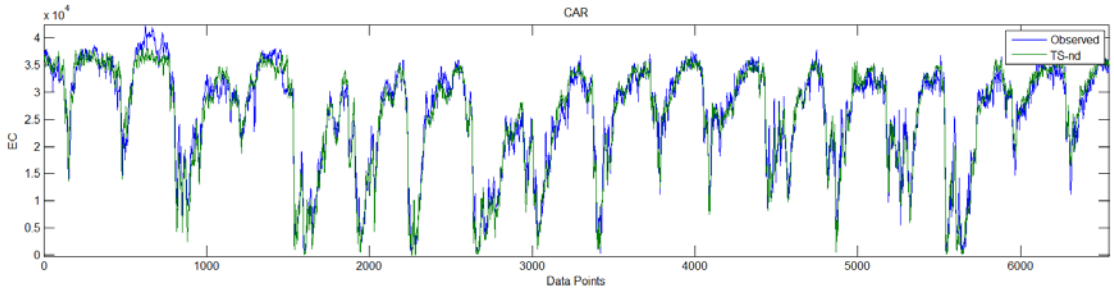

r= 0.64314
ANN-TS
Obs
4000
3500
3000
2500
2000
1500
1000
500
0
-500
-1000
500
1000
1500
2000

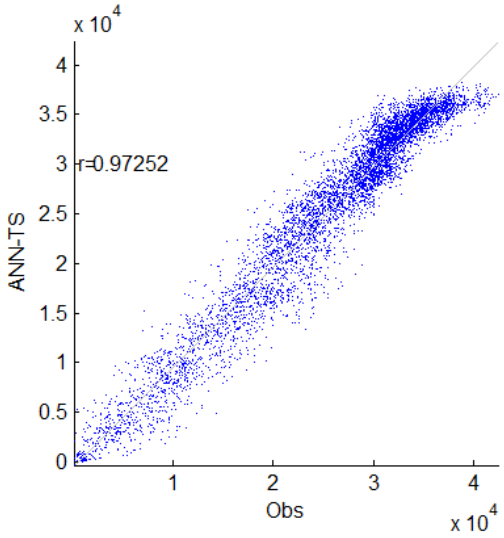
## MODEL 6

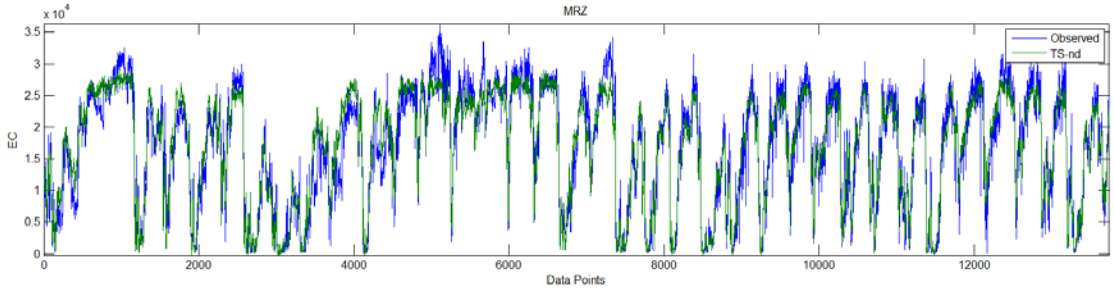
### *1 Tide*

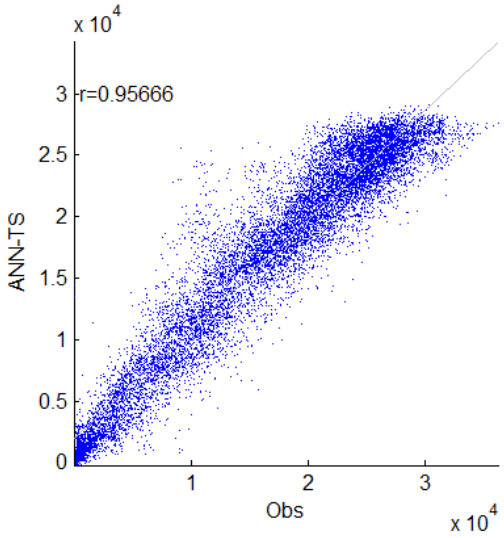


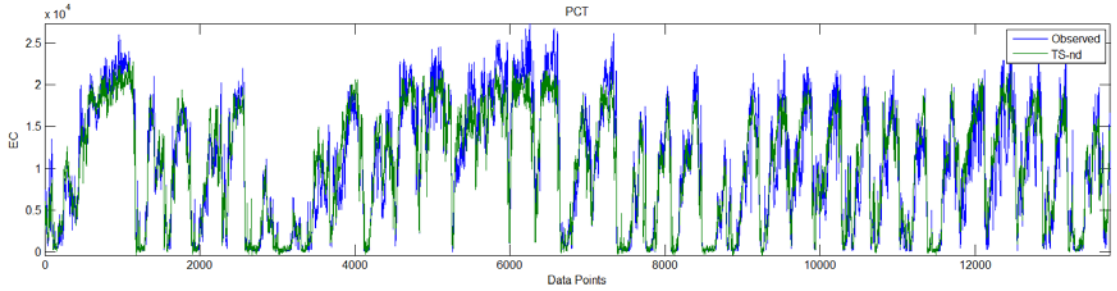



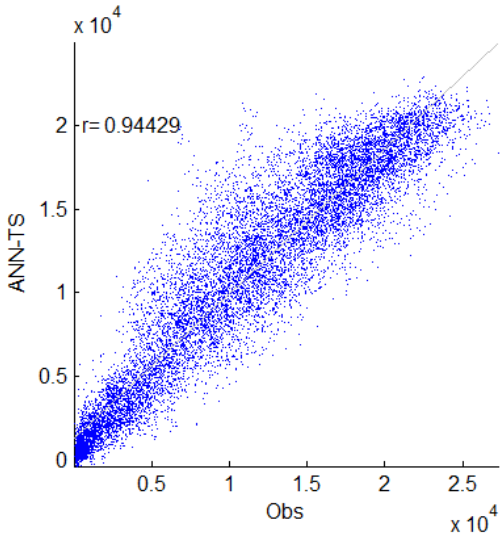



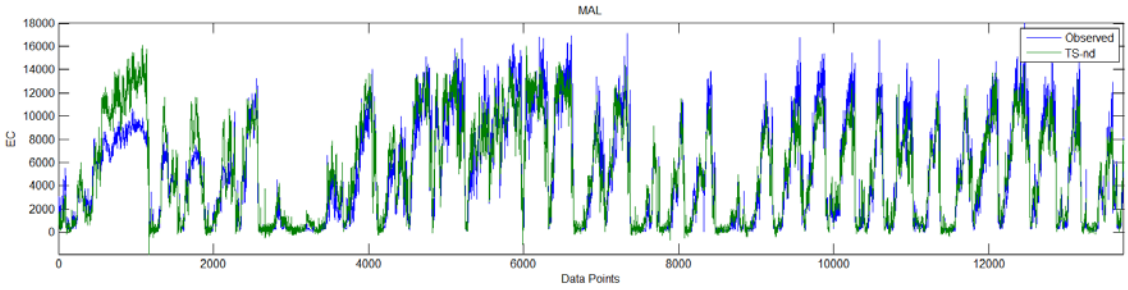

x 10^4
4
3.5
3
2.5
2
1.5
1
0.5
0
r=0.97252
ANN-TS
1
2
3
4
Obs
x 10^4

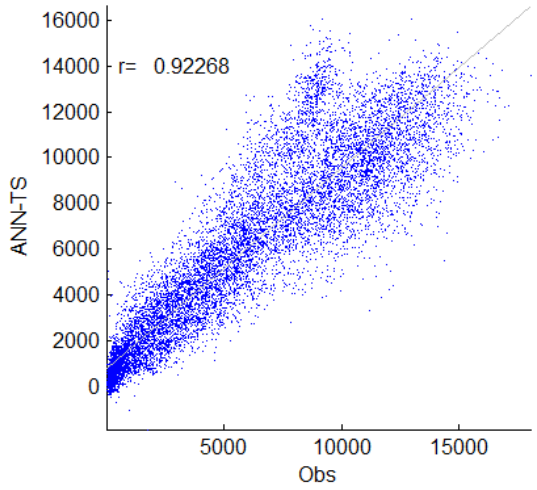

MRZ
x 10^4
EC
Observed
TS-nd
0
2000
4000
6000
8000
10000
12000
Data Points

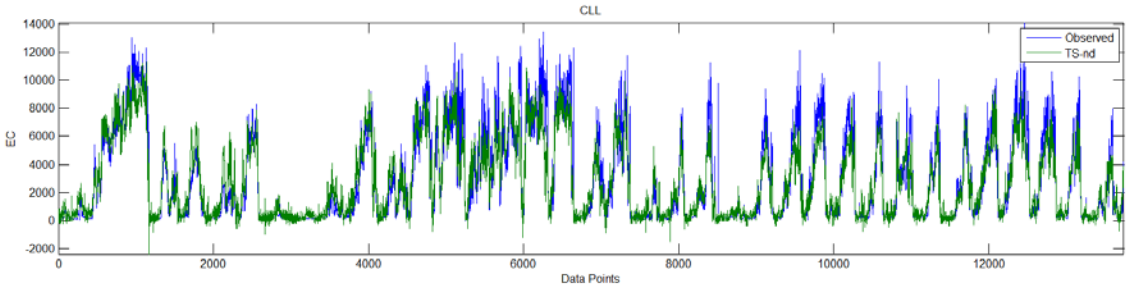

x 10^4
3
2.5
2
1.5
1
0.5
0
r=0.95666
ANN-TS
1
2
3
Obs
x 10^4

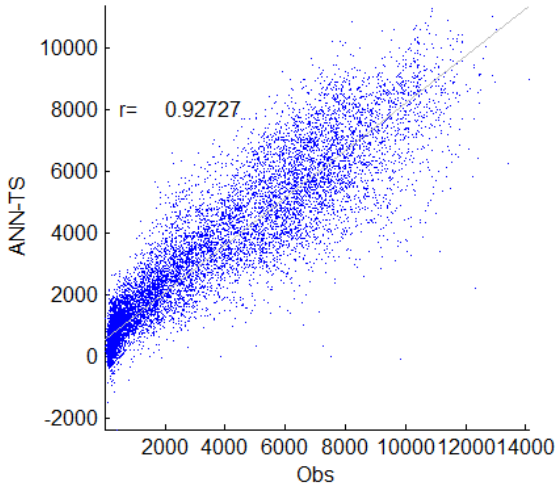

PCT
x 10^4
EC
Data Points
Observed
TS-nd

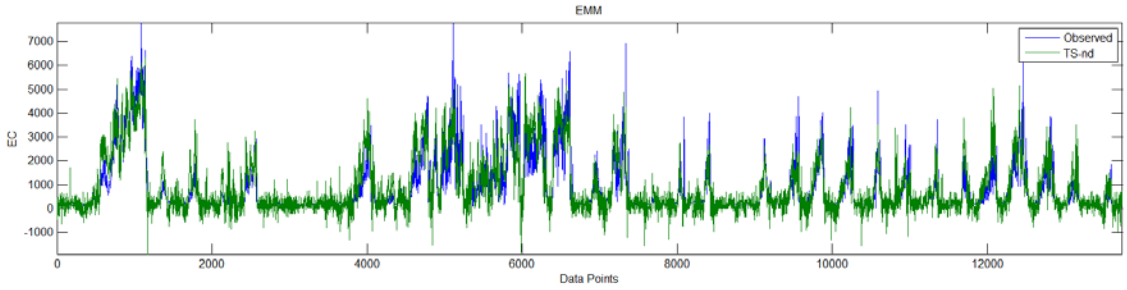

x 10^4
r= 0.94429
ANN-TS
Obs
x 10^4

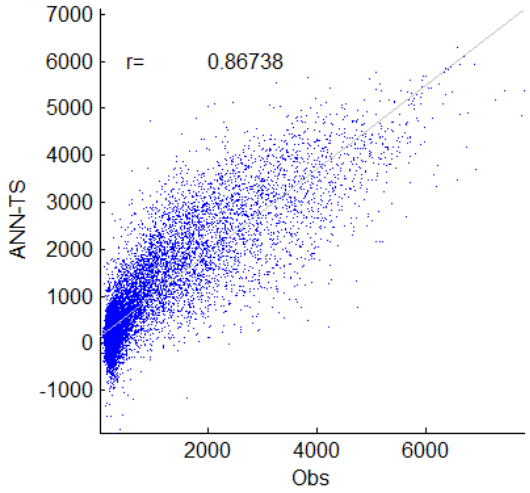

MAL
EC
Data Points
Observed
TS-nd

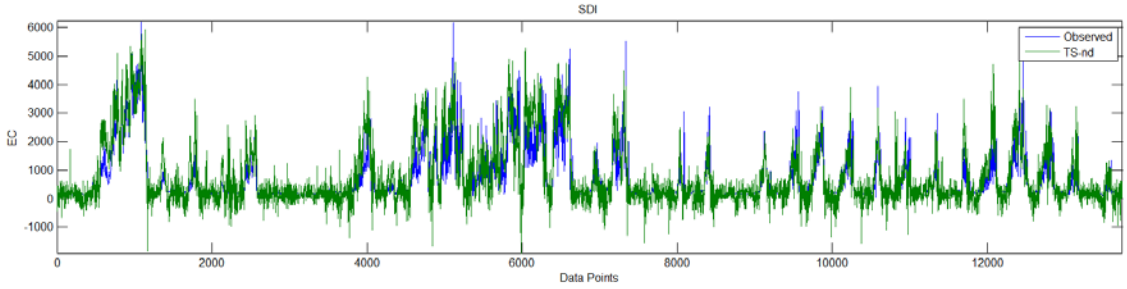

r= 0.92268
ANN-TS
Obs
16000
14000
12000
10000
8000
6000
4000
2000
0
5000
10000
15000

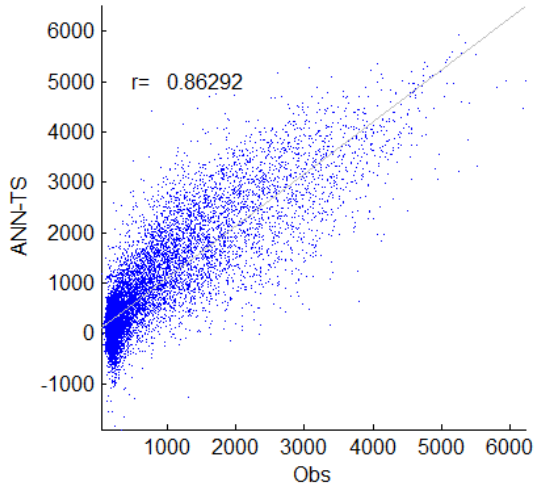

CLL
Observed
TS-nd
EC
Data Points
14000
12000
10000
8000
6000
4000
2000
0
-2000
0
2000
4000
6000
8000
10000
12000

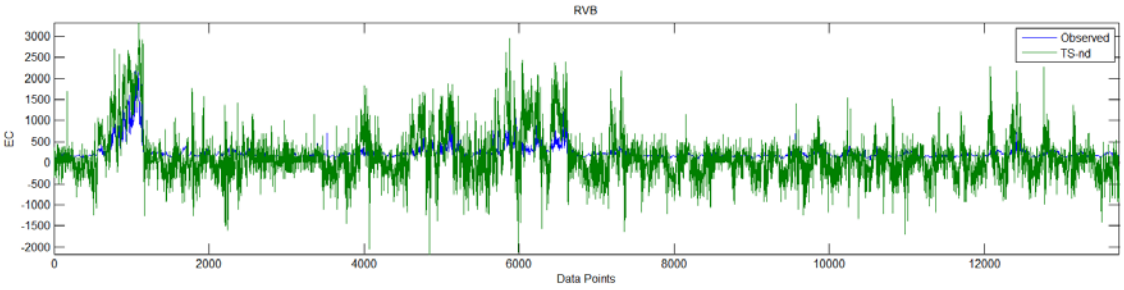

r= 0.92727
ANN-TS
Obs
10000
8000
6000
4000
2000
0
-2000
2000
4000
6000
8000
10000
12000
14000

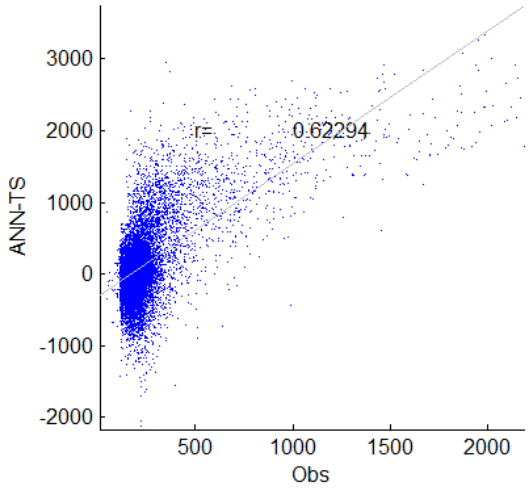

EMM
Observed
TS-nd
EC
Data Points


r= 0.86738
ANN-TS
Obs


SDI
Observed
TS-nd
EC
Data Points

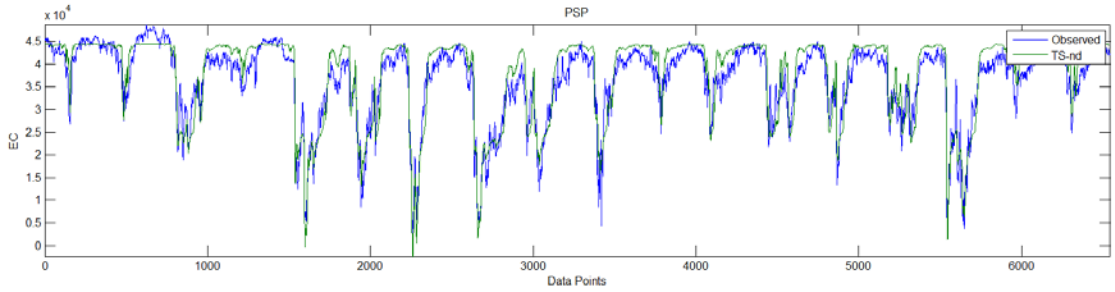

r= 0.86292
ANN-TS
Obs
6000
5000
4000
3000
2000
1000
0
-1000
1000 2000 3000 4000 5000 6000

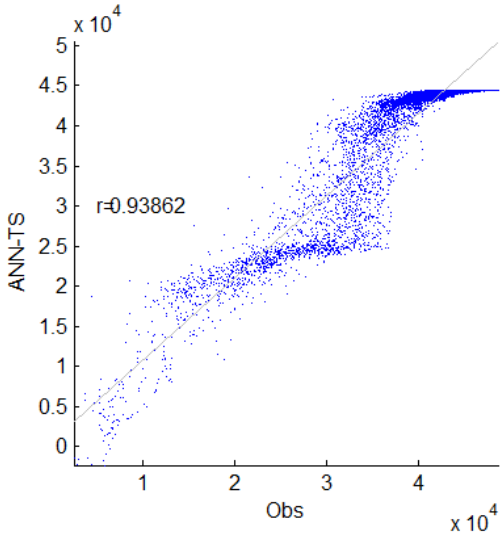

RVB
Observed
TS-nd
EC
Data Points
3000
2500
2000
1500
1000
500
0
-500
-1000
-1500
-2000
0 2000 4000 6000 8000 10000 12000

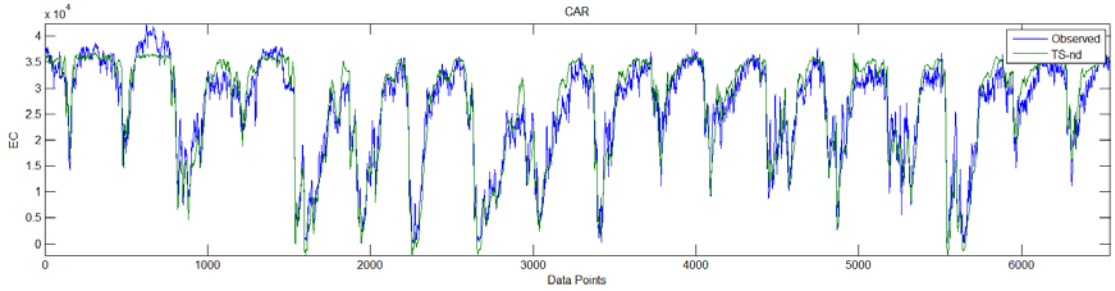

r= 0.62294
ANN-TS
Obs
3000
2000
1000
0
-1000
-2000
500 1000 1500 2000

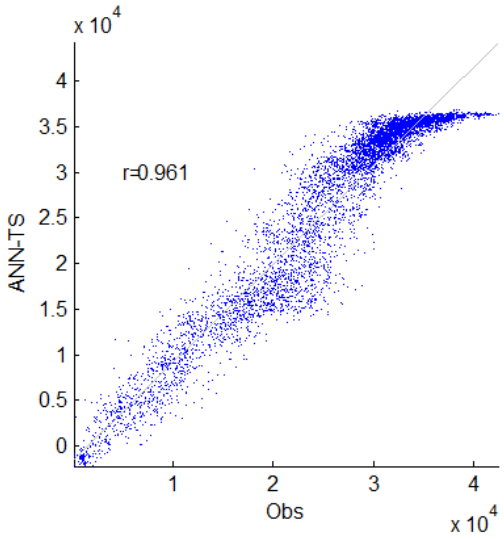
## MODEL 7

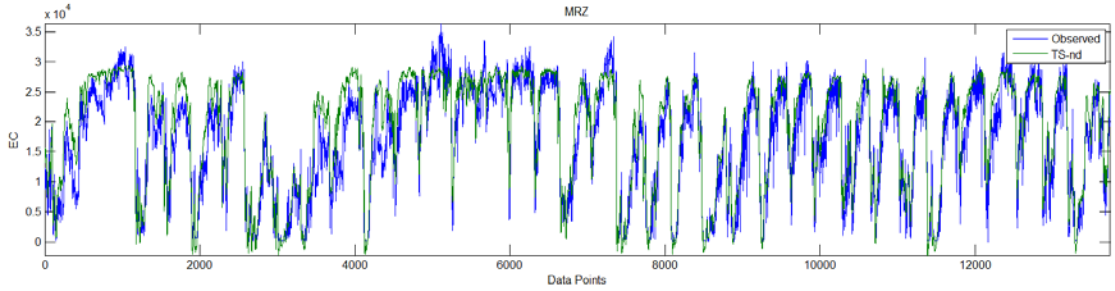
### *No Tide*

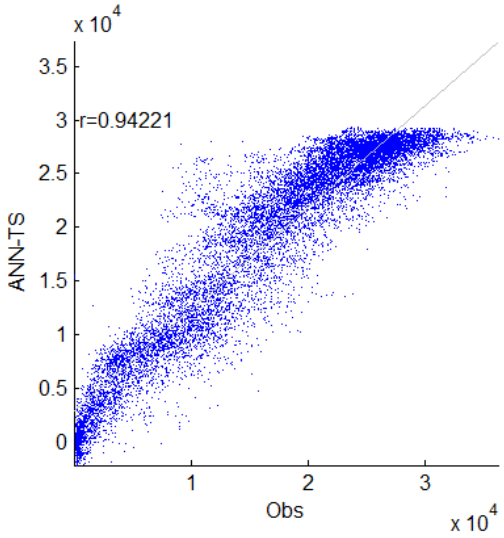


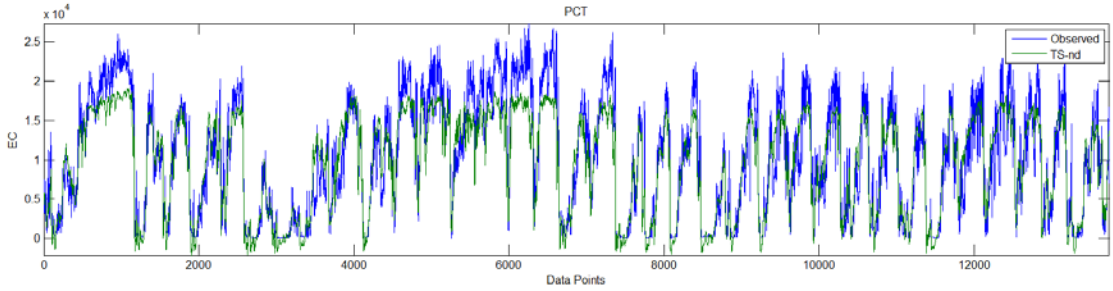



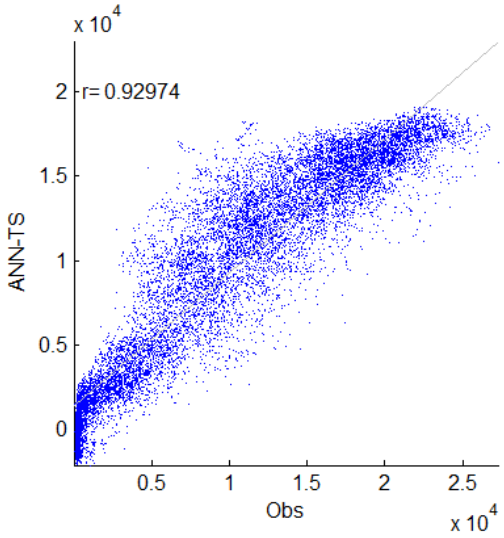

CAR
x 10^4
EC
Data Points
Observed
TS-nd

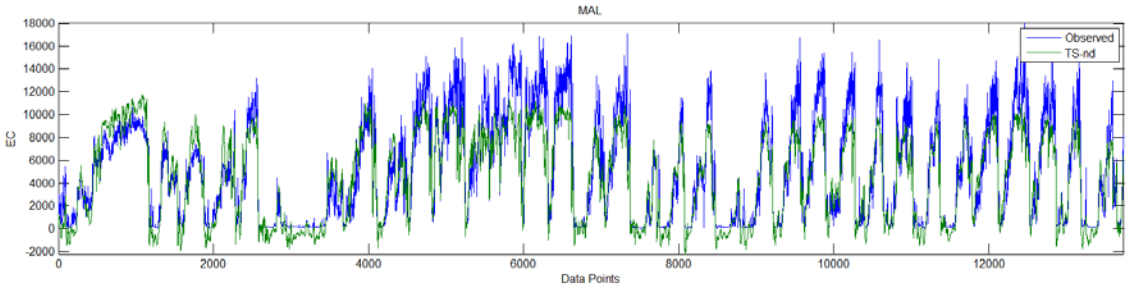

x 10^4
r=0.961
ANN-TS
Obs
x 10^4

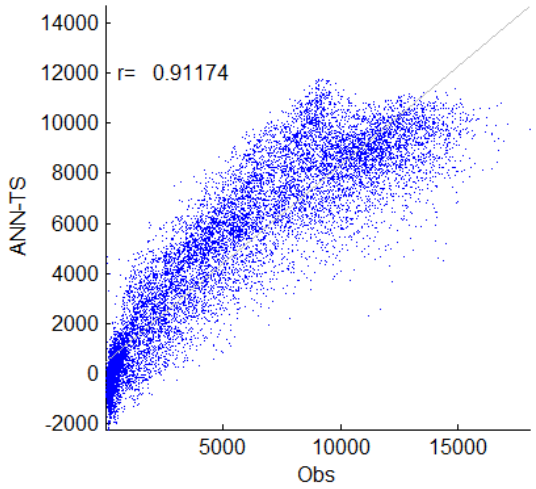

MRZ
x 10^4
EC
Data Points
Observed
TS-nd

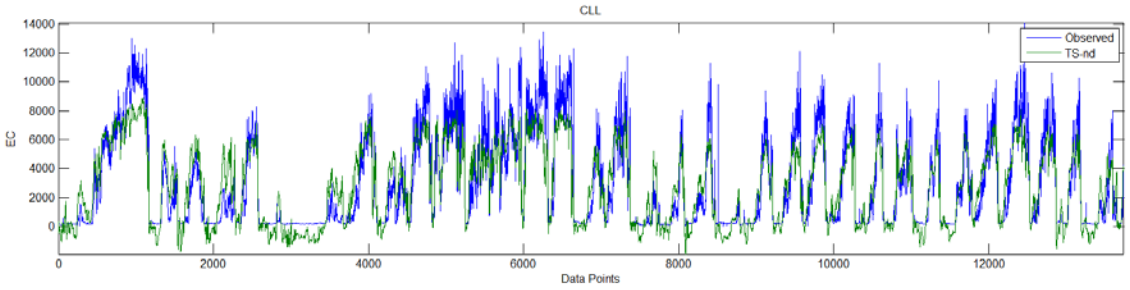

x 10^4
3.5
3
2.5
2
1.5
1
0.5
0
r=0.94221
ANN-TS
1
2
3
Obs
x 10^4

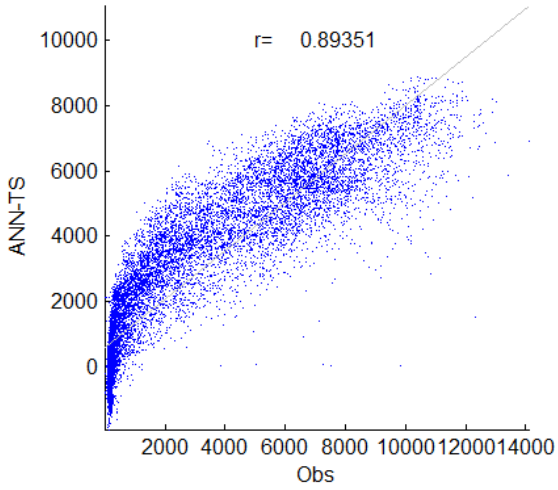

x 10^4
PCT
Observed
TS-nd
EC
2.5
2
1.5
1
0.5
0
0
2000
4000
6000
8000
10000
12000
Data Points

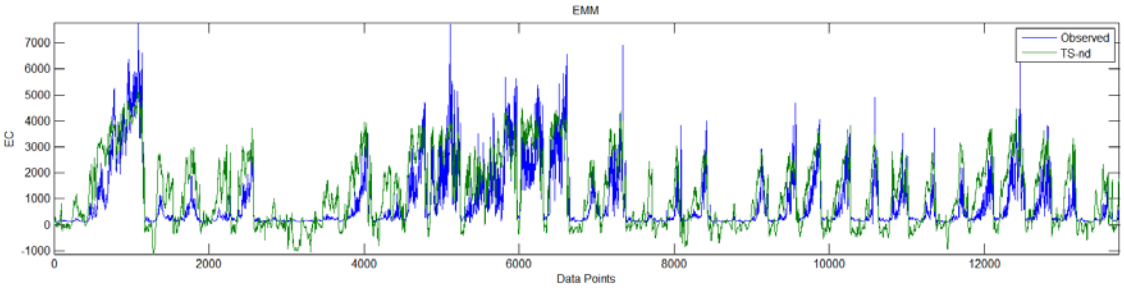

x 10^4
2
1.5
1
0.5
0
r= 0.92974
ANN-TS
0.5
1
1.5
2
2.5
Obs
x 10^4

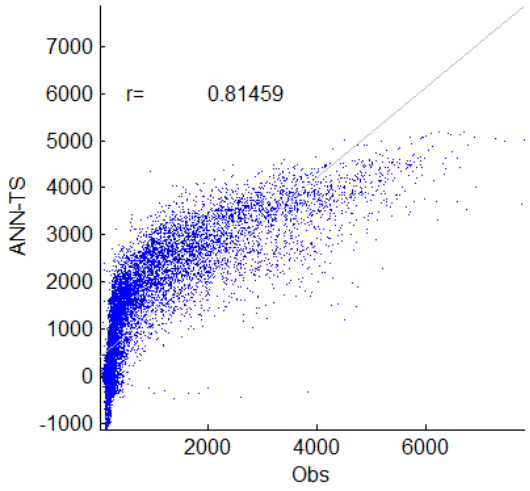

MAL
Observed
TS-nd
EC
Data Points

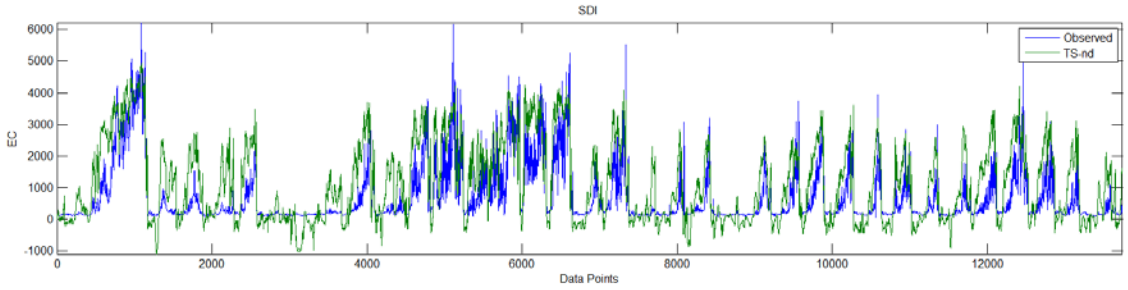

r= 0.91174
ANN-TS
Obs

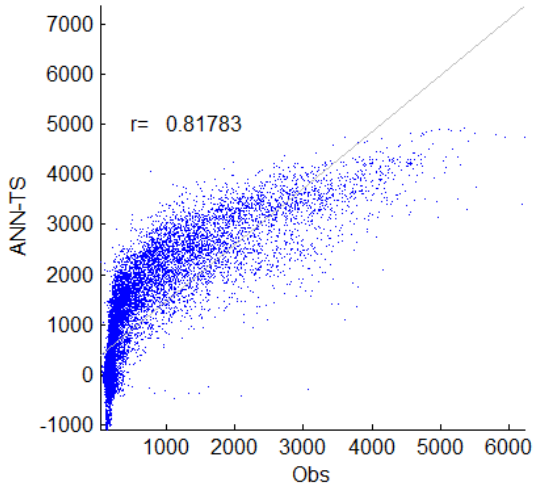

CLL
Observed
TS-nd
EC
Data Points

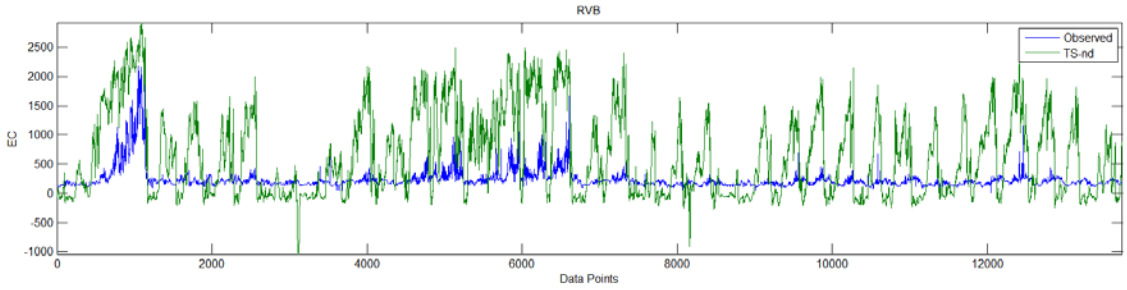

r= 0.89351
ANN-TS
Obs
10000
8000
6000
4000
2000
0
2000 4000 6000 8000 10000 12000 14000

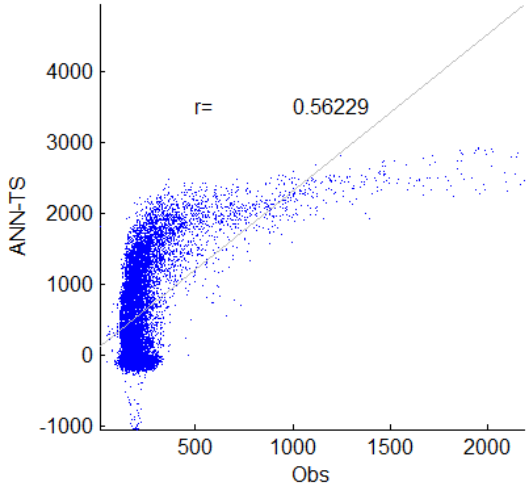

EMM
Observed
TS-nd
EC
Data Points
7000
6000
5000
4000
3000
2000
1000
0
-1000
0 2000 4000 6000 8000 10000 12000


r= 0.81459
ANN-TS
Obs
7000
6000
5000
4000
3000
2000
1000
0
-1000
2000 4000 6000


SDI
Observed
TS-nd
EC
Data Points
6000
5000
4000
3000
2000
1000
0
-1000
0
2000
4000
6000
8000
10000
12000

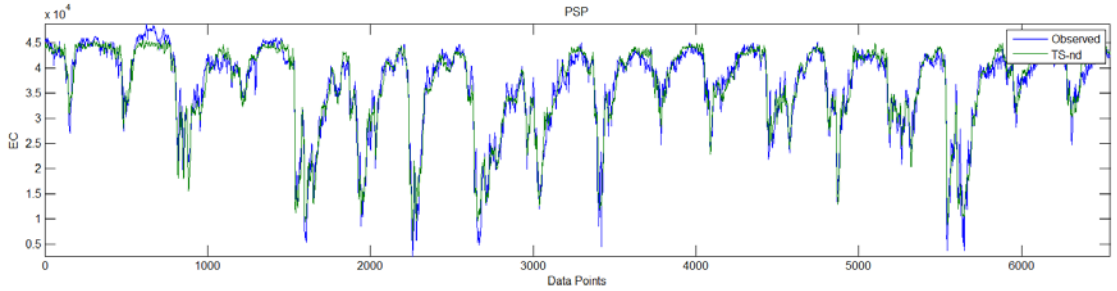

r= 0.81783
ANN-TS
Obs
7000
6000
5000
4000
3000
2000
1000
0
-1000
1000
2000
3000
4000
5000
6000

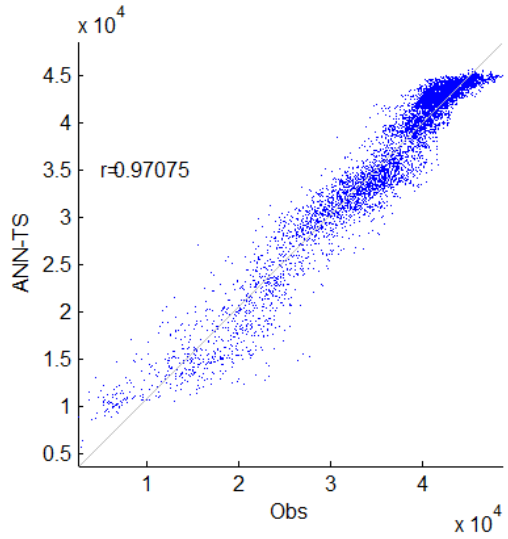

RVB
Observed
TS-nd
EC
2500
2000
1500
1000
500
0
-500
-1000
0
2000
4000
6000
8000
10000
12000
Data Points

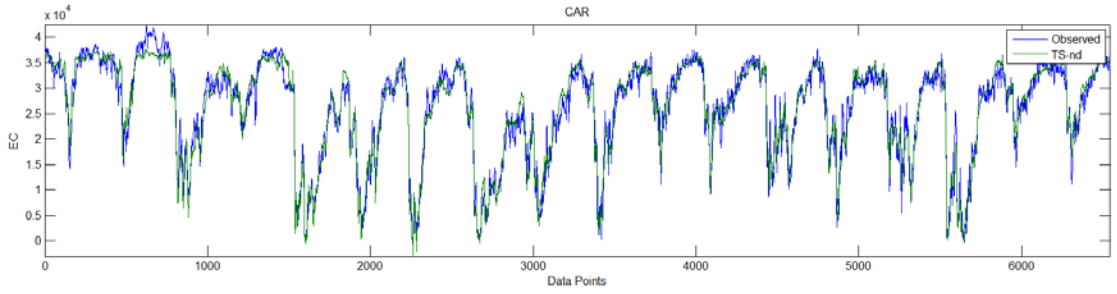

r= 0.56229
ANN-TS
4000
3000
2000
1000
0
-1000
500
1000
1500
2000
Obs

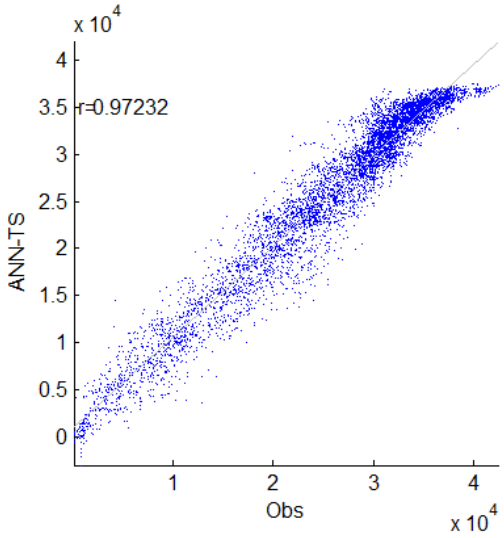
## MODEL 8

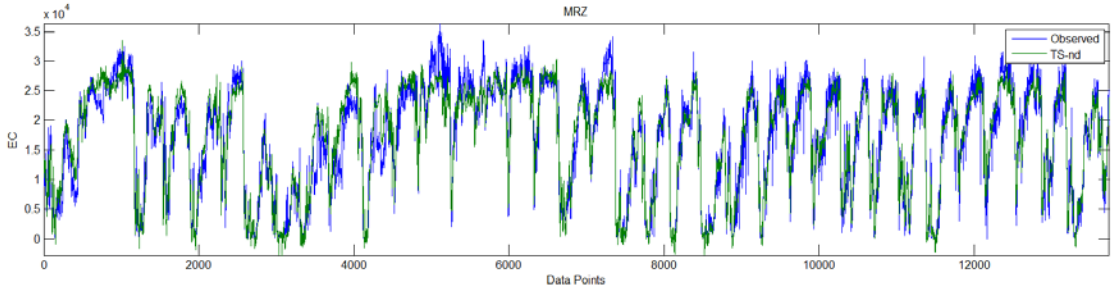
### *Actual Tide at Golden Gate (MSL)*

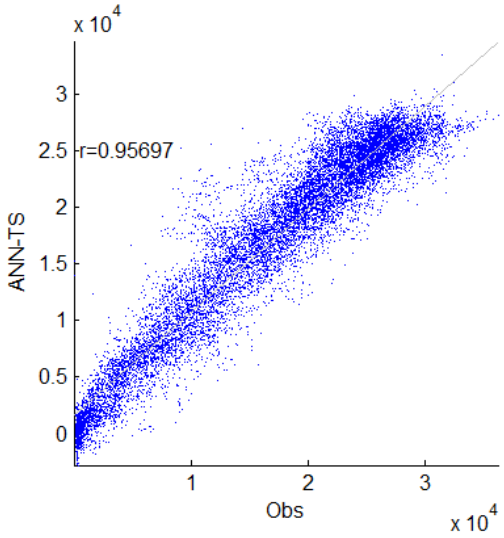


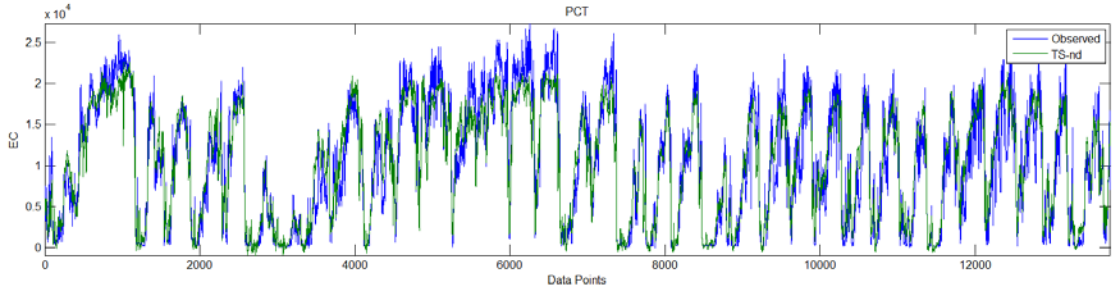



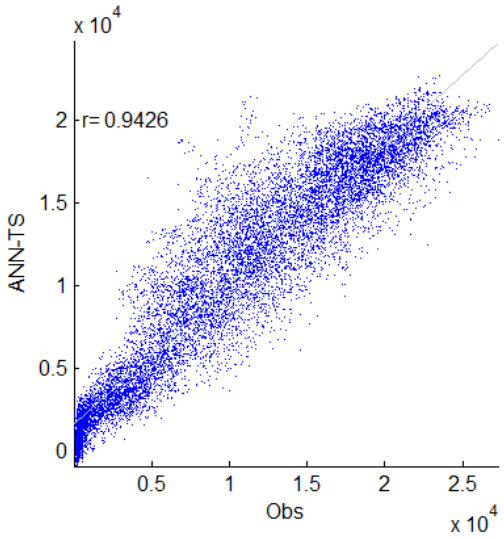



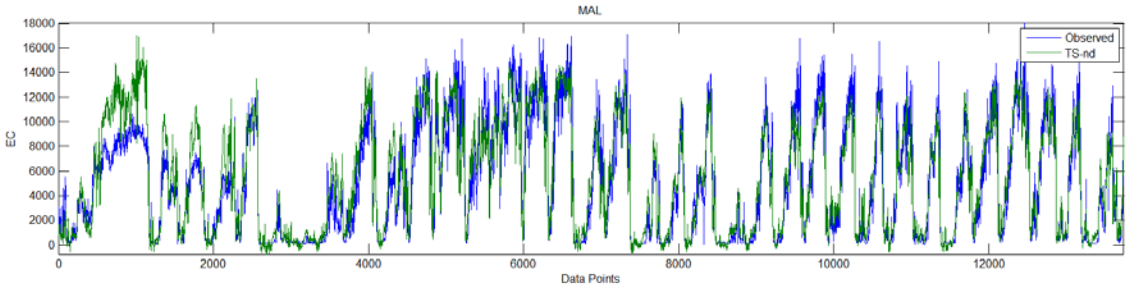

x 10^4
r=0.97232
ANN-TS
Obs
x 10^4

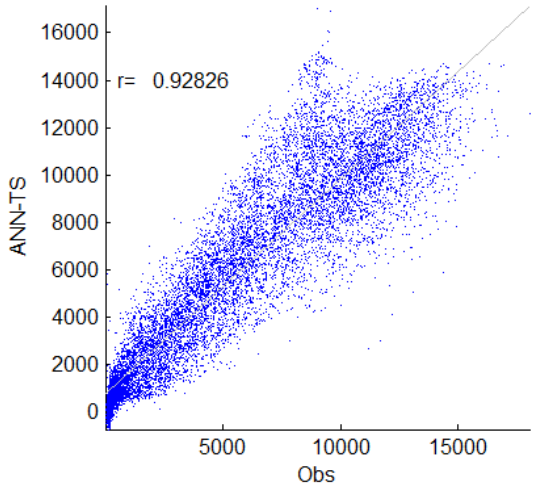

MRZ
Observed
TS-nd
EC
Data Points

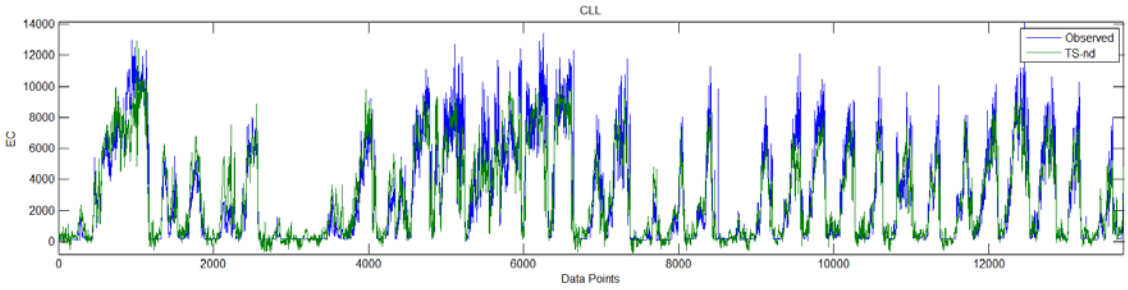

x 10^4
r=0.95697
ANN-TS
Obs
x 10^4

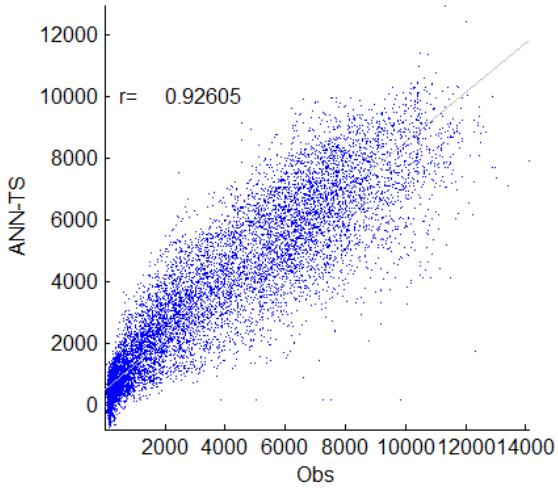

PCT
x 10^4
EC
Data Points
Observed
TS-nd

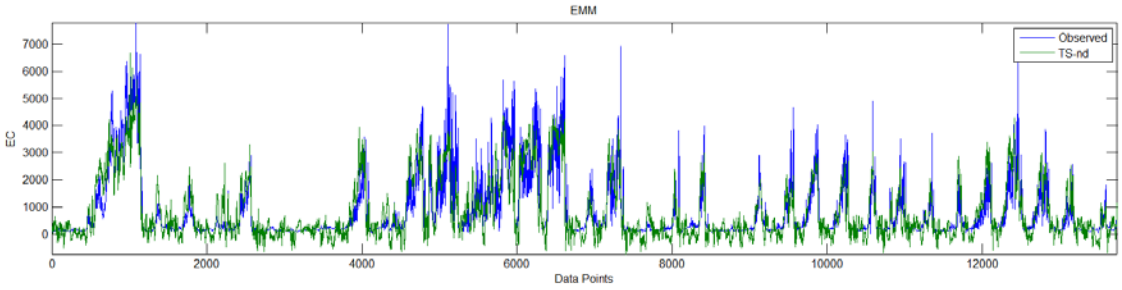

x 10^4
r= 0.9426
ANN-TS
Obs
x 10^4

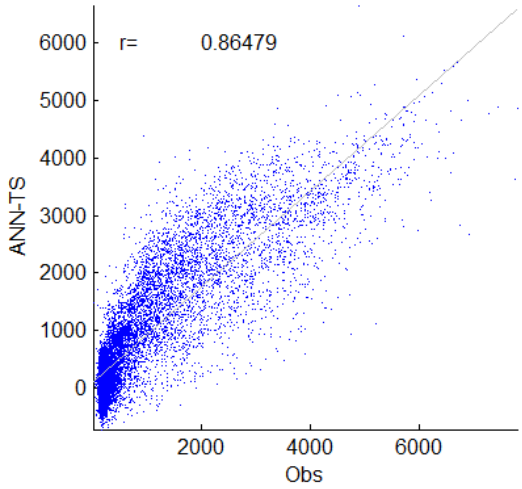

MAL
EC
Data Points
Observed
TS-nd

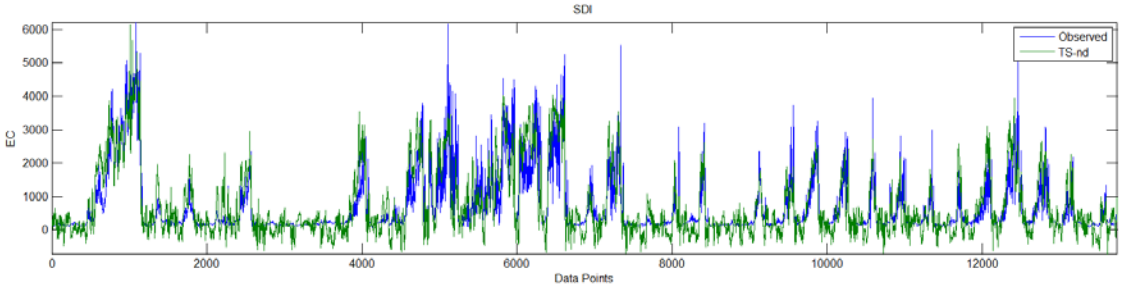

r= 0.92826
ANN-TS
Obs
16000
14000
12000
10000
8000
6000
4000
2000
0
5000
10000
15000

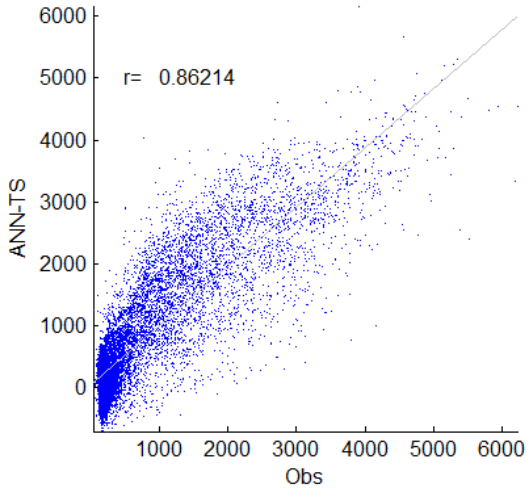

CLL
Observed
TS-nd
EC
Data Points
14000
12000
10000
8000
6000
4000
2000
0
0
2000
4000
6000
8000
10000
12000

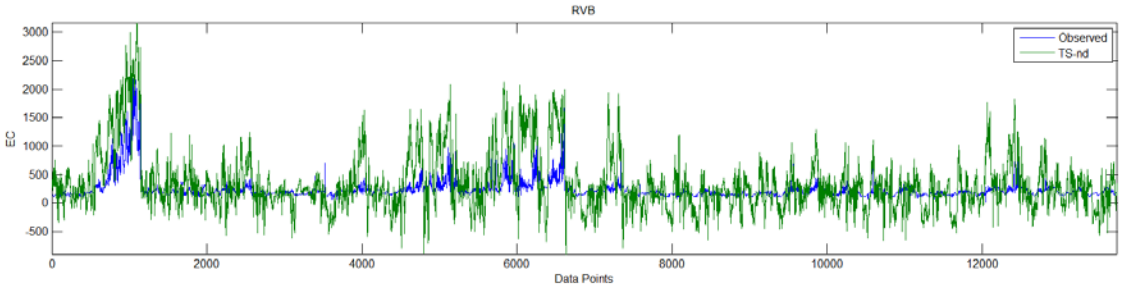

r= 0.92605
ANN-TS
Obs
12000
10000
8000
6000
4000
2000
0
2000 4000 6000 8000 10000 12000 14000

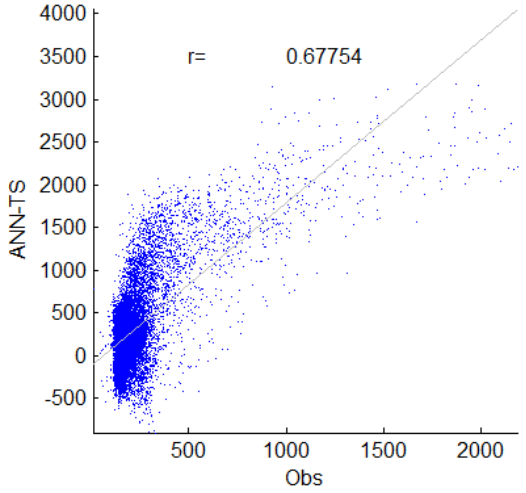

EMM
Observed
TS-nd
EC
Data Points


r= 0.86479
ANN-TS
Obs


SDI
Observed
TS-nd
EC
Data Points

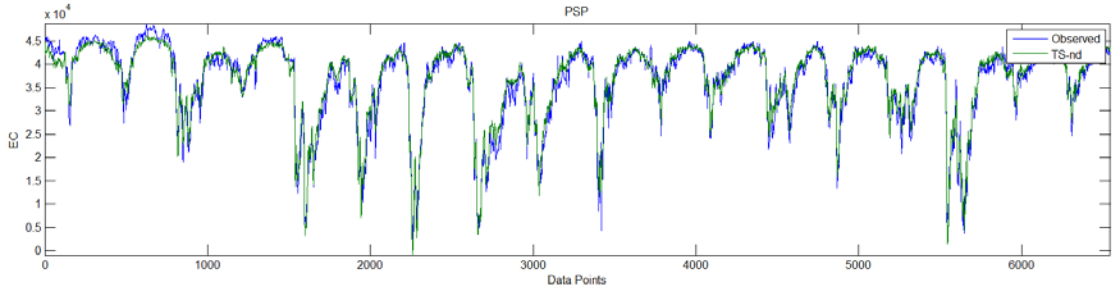

r= 0.86214
ANN-TS
Obs
6000
5000
4000
3000
2000
1000
0
1000 2000 3000 4000 5000 6000

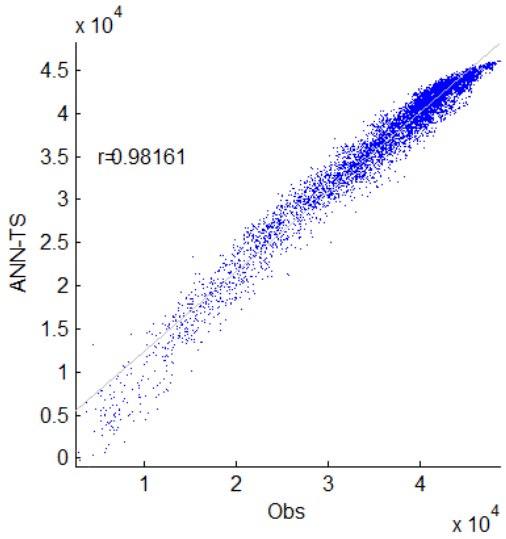

RVB
Observed
TS-nd
EC
Data Points
3000
2500
2000
1500
1000
500
0
-500
0 2000 4000 6000 8000 10000 12000

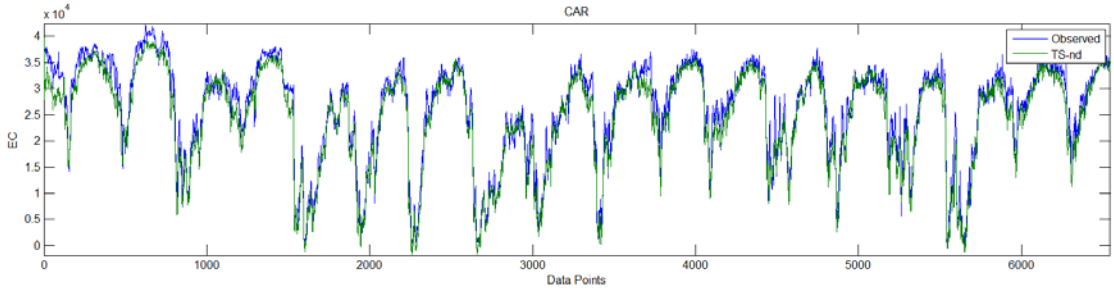

r= 0.67754
ANN-TS
Obs
4000
3500
3000
2500
2000
1500
1000
500
0
-500
500 1000 1500 2000

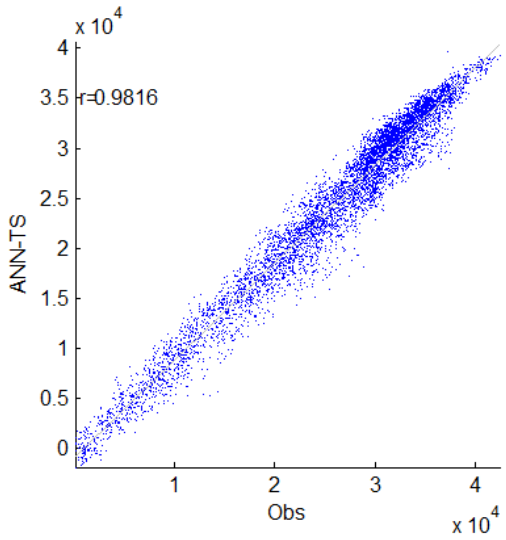
## MODEL 9

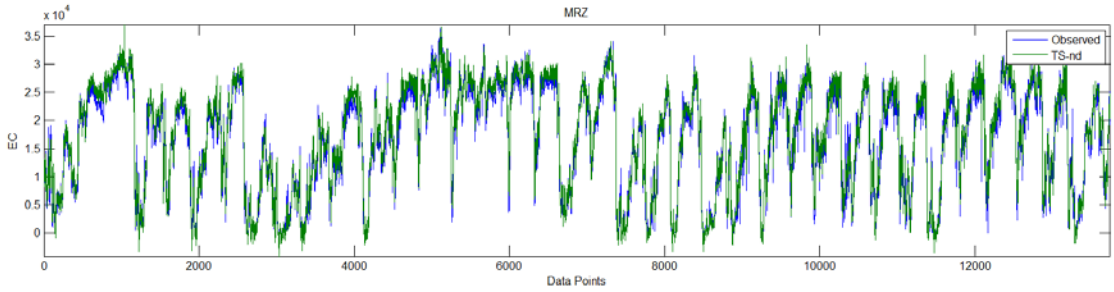
### *30-Day antecedent salinity input*

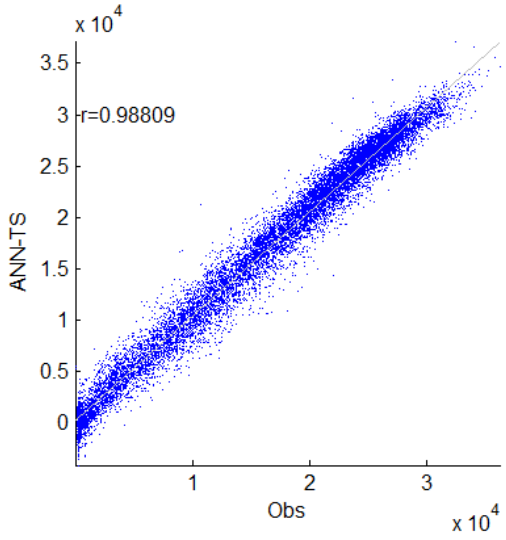

PSP
x 10^4
EC
Data Points
Observed
TS-nd

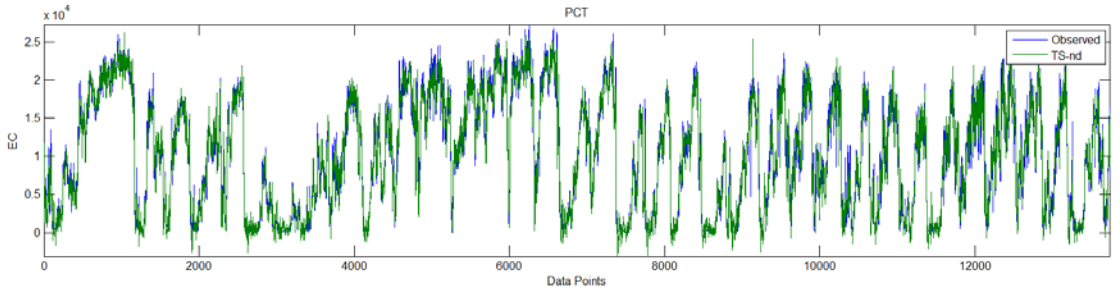

x 10^4
r=0.98161
ANN-TS
Obs
x 10^4

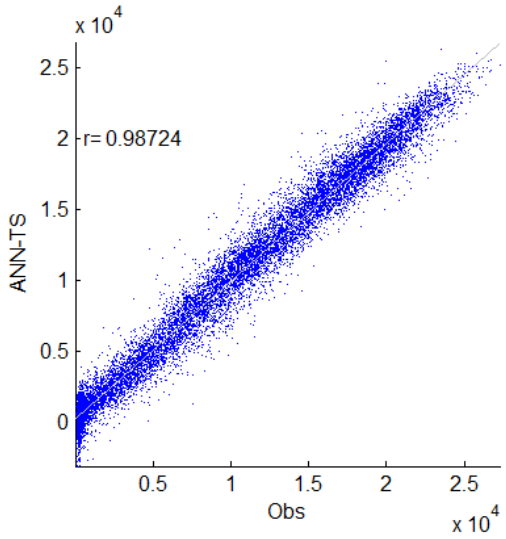

CAR
x 10^4
EC
Data Points
Observed
TS-nd

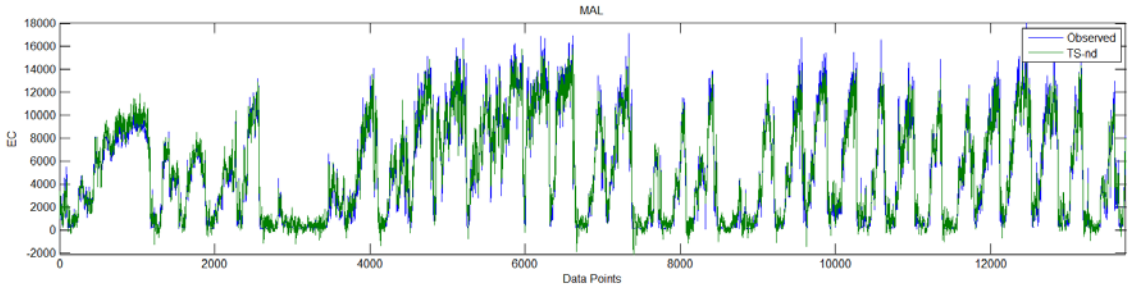

x 10^4
r=0.9816
ANN-TS
Obs
x 10^4

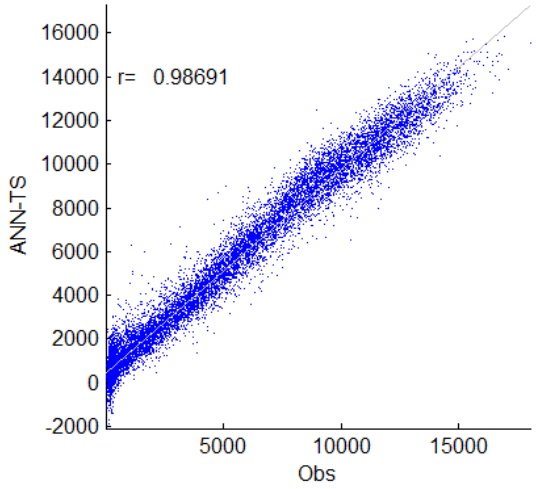

MRZ
Observed
TS-nd
EC
Data Points

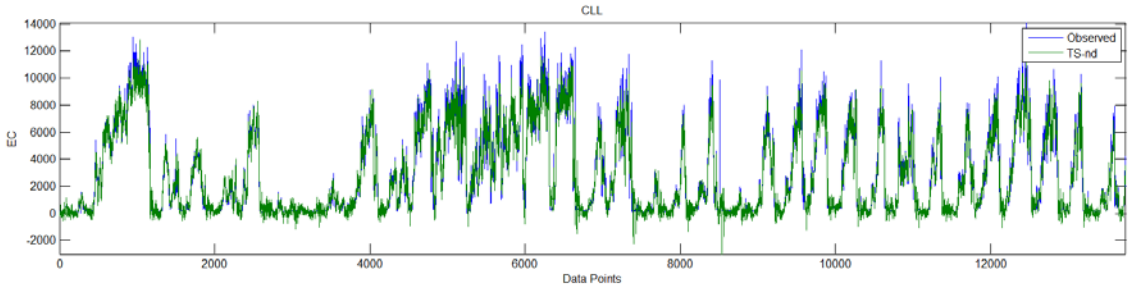

x 10^4
r=0.98809
ANN-TS
Obs
x 10^4

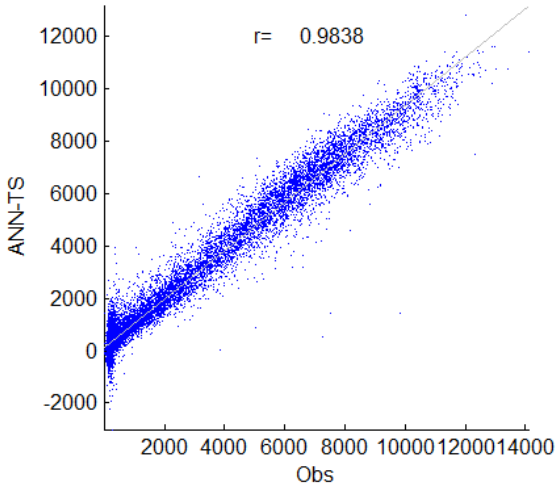

PCT
x 10^4
EC
Data Points
Observed
TS-nd

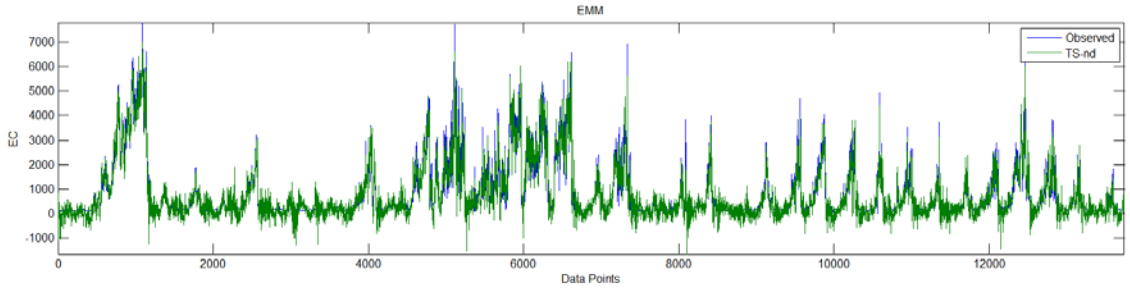

x 10^4
r= 0.98724
ANN-TS
Obs
x 10^4

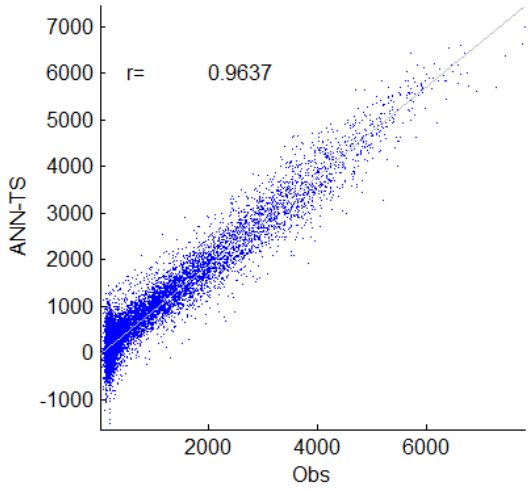

MAL
EC
Data Points
Observed
TS-nd

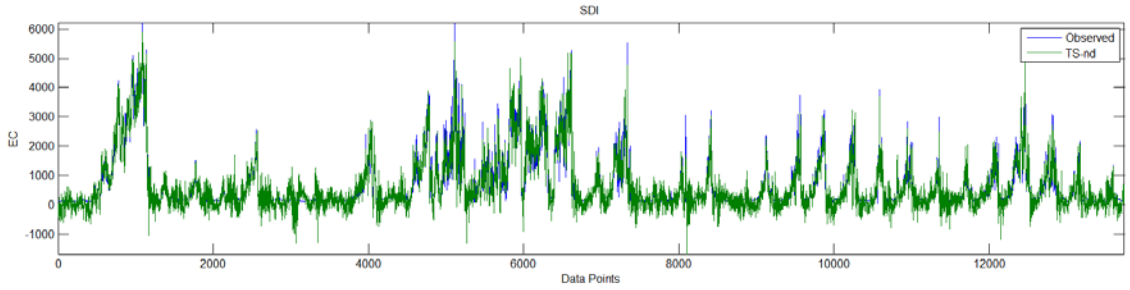

r= 0.98691
ANN-TS
Obs
16000
14000
12000
10000
8000
6000
4000
2000
0
-2000
5000
10000
15000

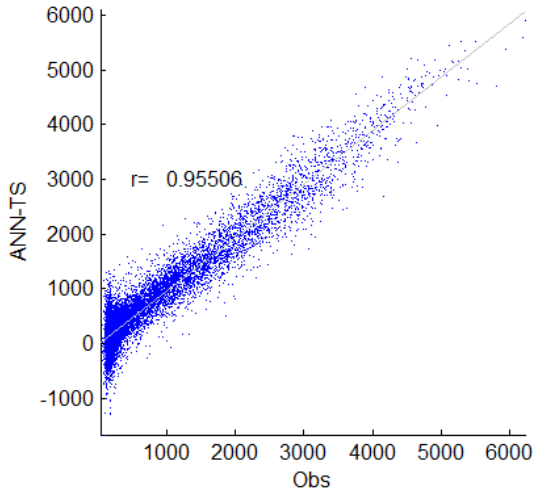

CLL
Observed
TS-nd
EC
Data Points
14000
12000
10000
8000
6000
4000
2000
0
-2000
0
2000
4000
6000
8000
10000
12000

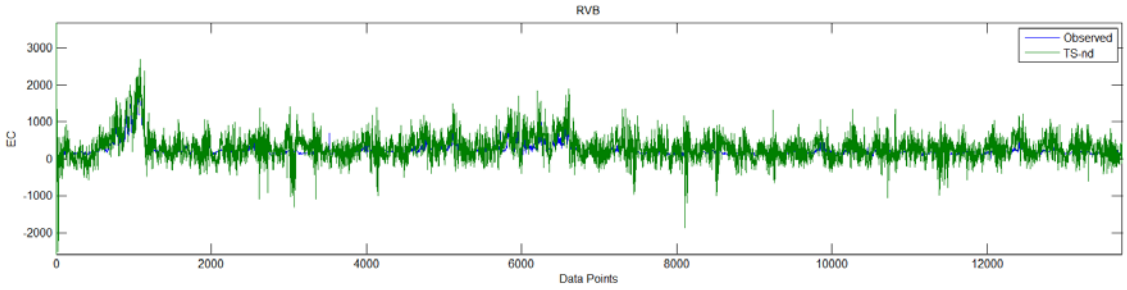

r= 0.9838
ANN-TS
Obs
12000
10000
8000
6000
4000
2000
0
-2000
2000 4000 6000 8000 10000 12000 14000

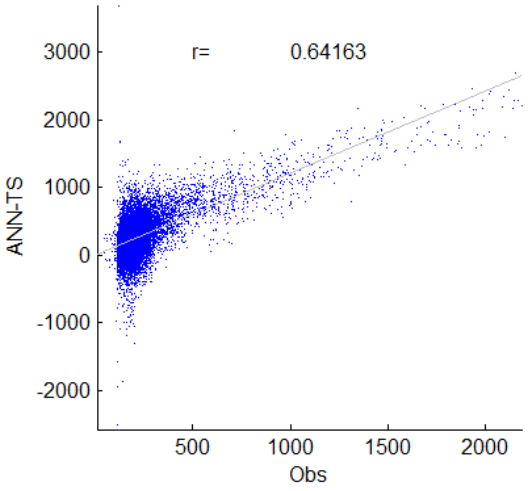

EMM
Observed
TS-nd
EC
Data Points


r= 0.9637
ANN-TS
Obs


SDI
Observed
TS-nd
EC
Data Points

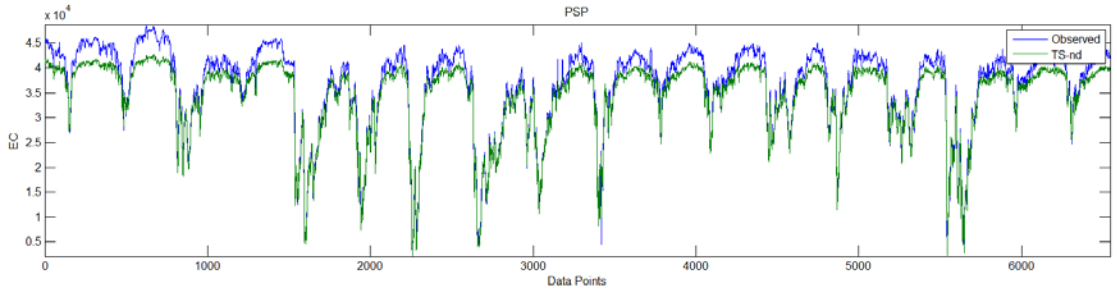

r= 0.95506
ANN-TS
Obs
6000
5000
4000
3000
2000
1000
0
-1000
1000 2000 3000 4000 5000 6000

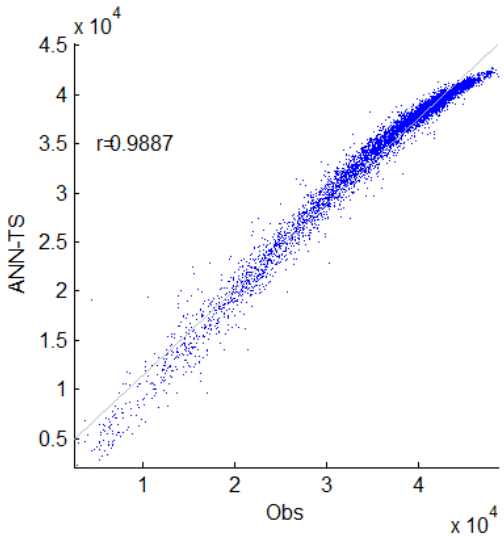

RVB
Observed
TS-nd
EC
Data Points
3000
2000
1000
0
-1000
-2000
0 2000 4000 6000 8000 10000 12000

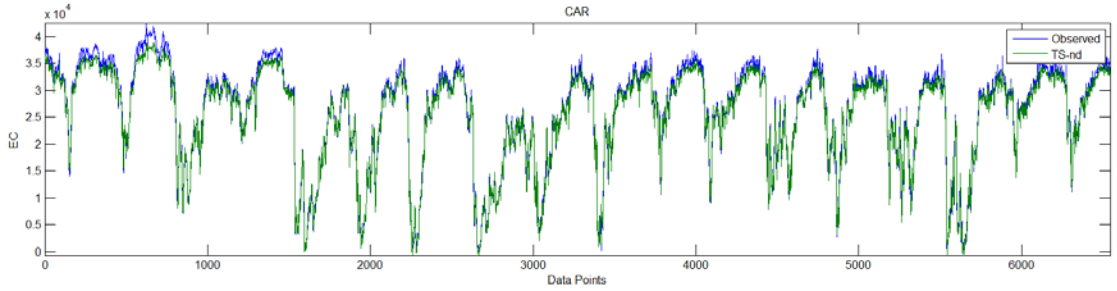

r= 0.64163
ANN-TS
Obs
3000
2000
1000
0
-1000
-2000
500 1000 1500 2000

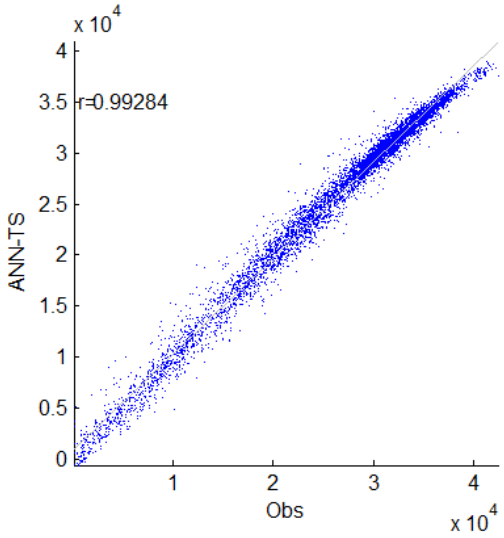
## MODEL 10

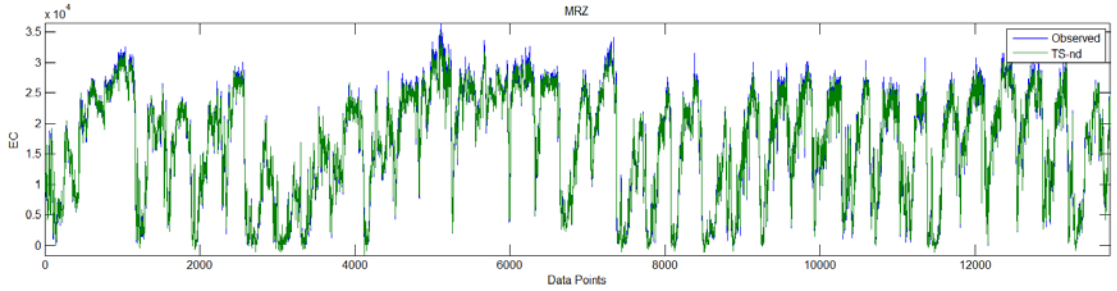
### *NARX*

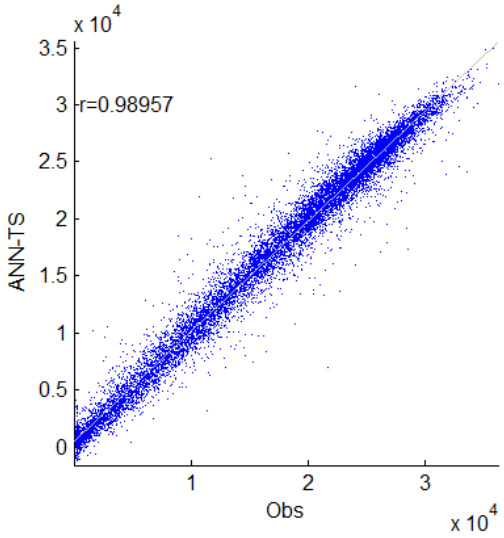


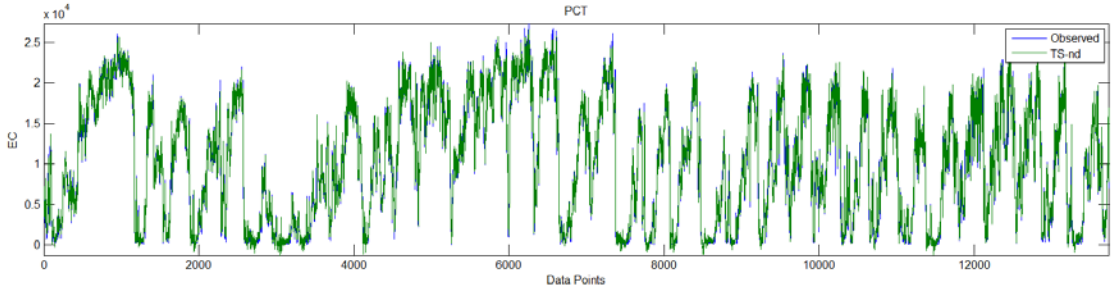



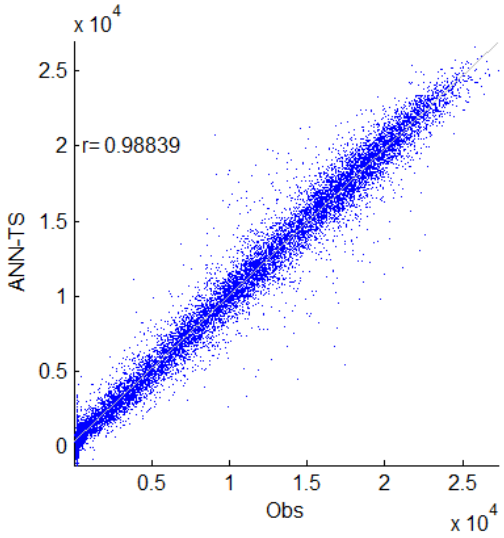

CAR
x 10^4
EC
Data Points
Observed
TS-nd

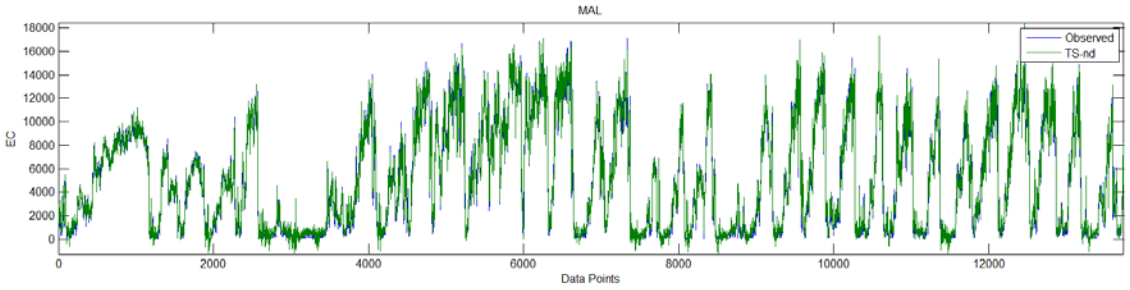

x 10^4
r=0.99284
ANN-TS
Obs
x 10^4

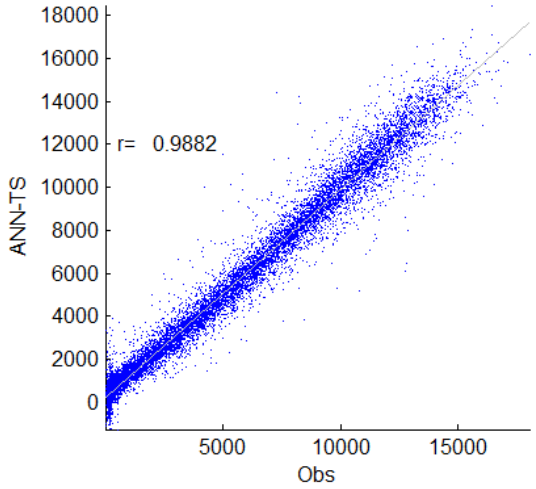

MRZ
x 10^4
EC
Data Points
Observed
TS-nd

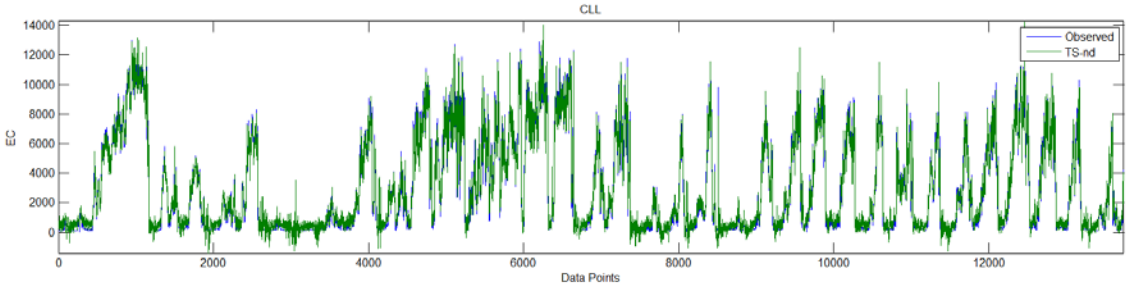

x 10^4
3.5
3
2.5
2
1.5
1
0.5
0
r=0.98957
ANN-TS
1
2
3
Obs
x 10^4

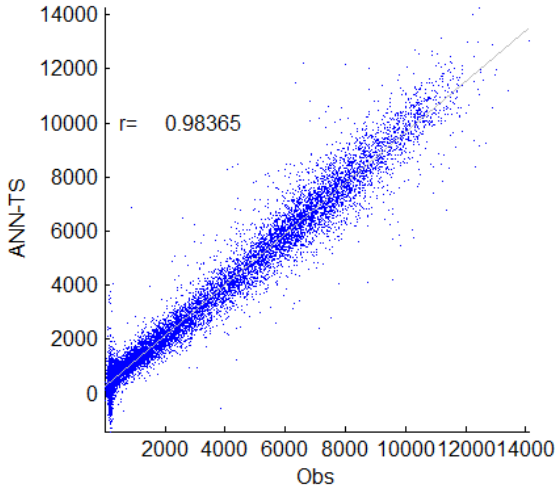

PCT
x 10^4
2.5
2
1.5
1
0.5
0
EC
Observed
TS-nd
0
2000
4000
6000
8000
10000
12000
Data Points

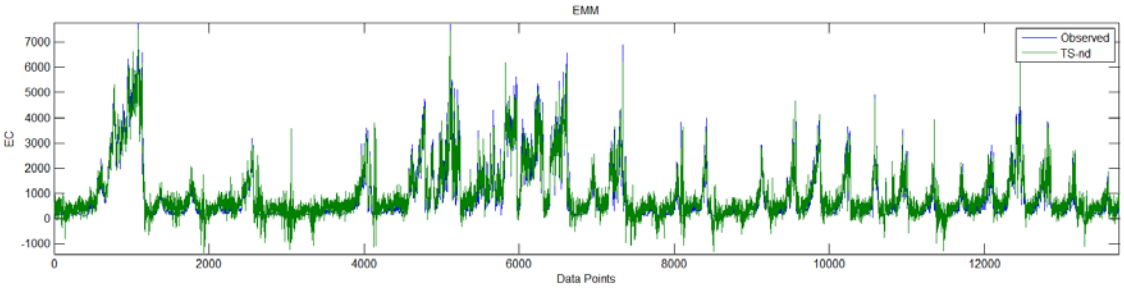

x 10^4
2.5
2
1.5
1
0.5
0
r= 0.98839
ANN-TS
0.5
1
1.5
2
2.5
Obs
x 10^4

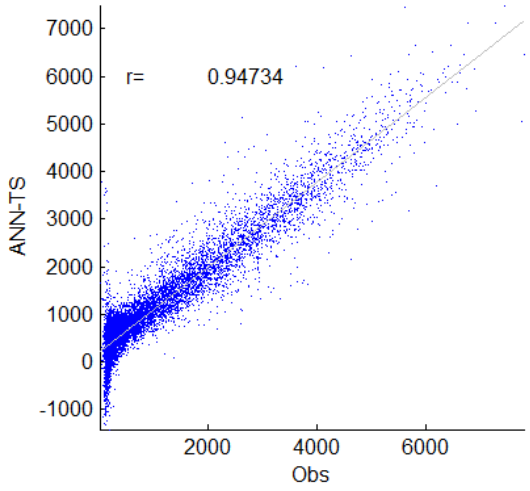

MAL
Observed
TS-nd
EC
Data Points

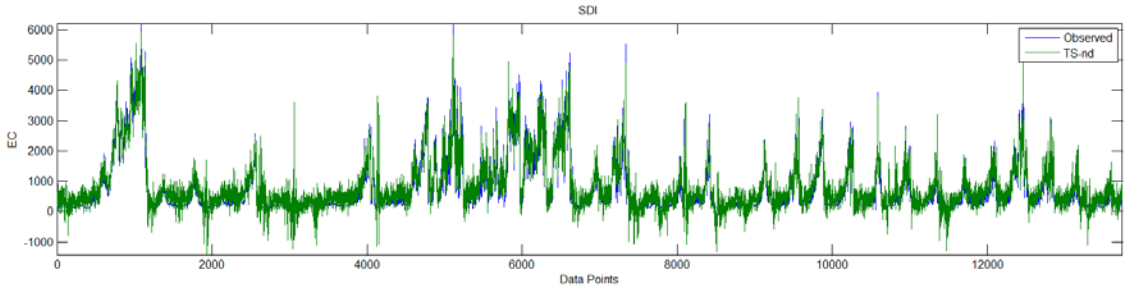

r= 0.9882
ANN-TS
Obs

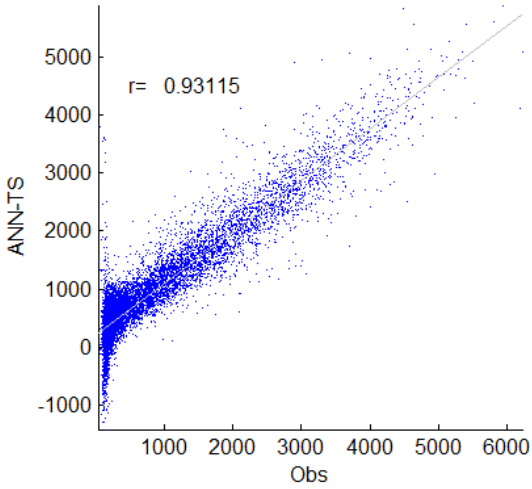

CLL
Observed
TS-nd
EC
Data Points

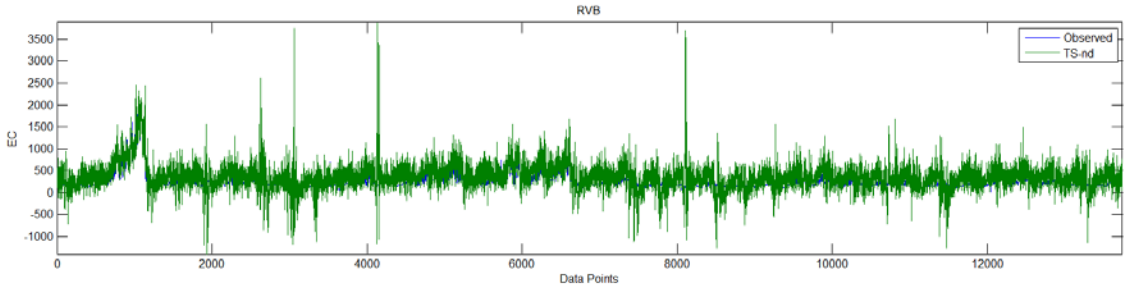

r= 0.98365
ANN-TS
Obs
14000
12000
10000
8000
6000
4000
2000
0
2000 4000 6000 8000 10000 12000 14000

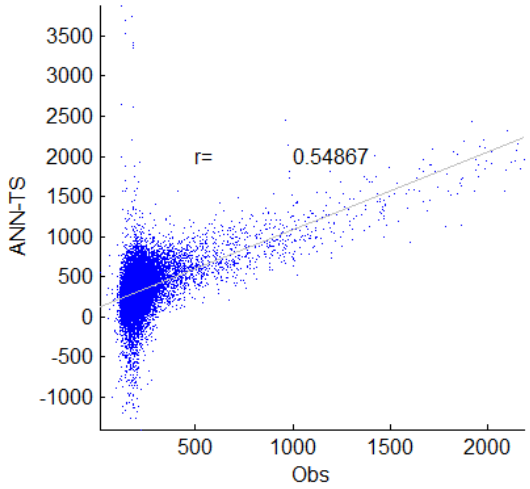

EMM
Observed
TS-nd
EC
Data Points
7000
6000
5000
4000
3000
2000
1000
0
-1000
0 2000 4000 6000 8000 10000 12000


r= 0.94734
ANN-TS
Obs
7000
6000
5000
4000
3000
2000
1000
0
-1000
2000 4000 6000


SDI
Observed
TS-nd
EC
Data Points
6000
5000
4000
3000
2000
1000
0
-1000
0
2000
4000
6000
8000
10000
12000


r= 0.93115
ANN-TS
Obs
5000
4000
3000
2000
1000
0
-1000
1000
2000
3000
4000
5000
6000

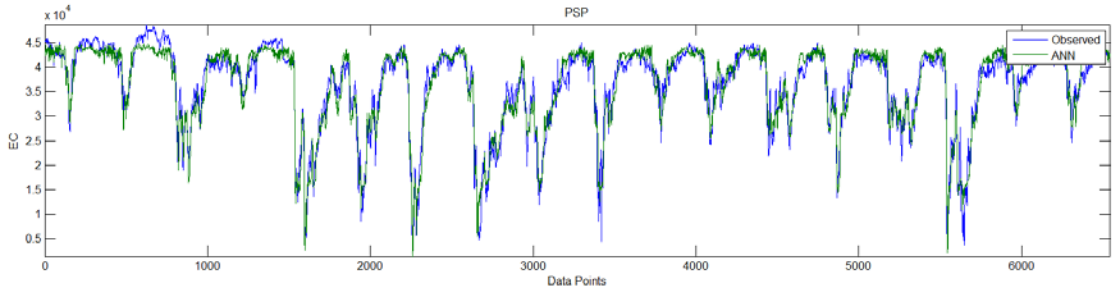

RVB
Observed
TS-nd
EC
Data Points
3500
3000
2500
2000
1500
1000
500
0
-500
-1000
0
2000
4000
6000
8000
10000
12000

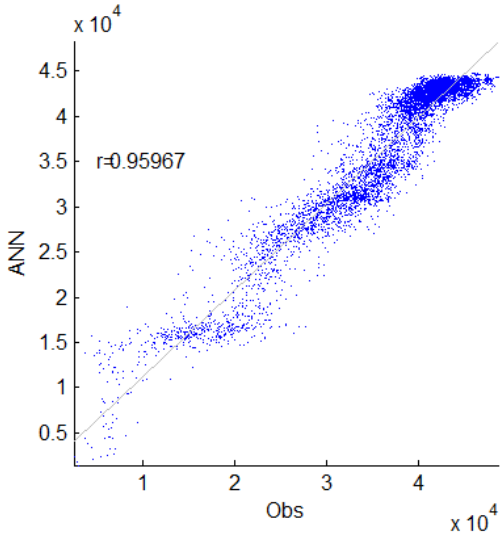

r= 0.54867
ANN-TS
Obs
3500
3000
2500
2000
1500
1000
500
0
-500
-1000
500
1000
1500
2000

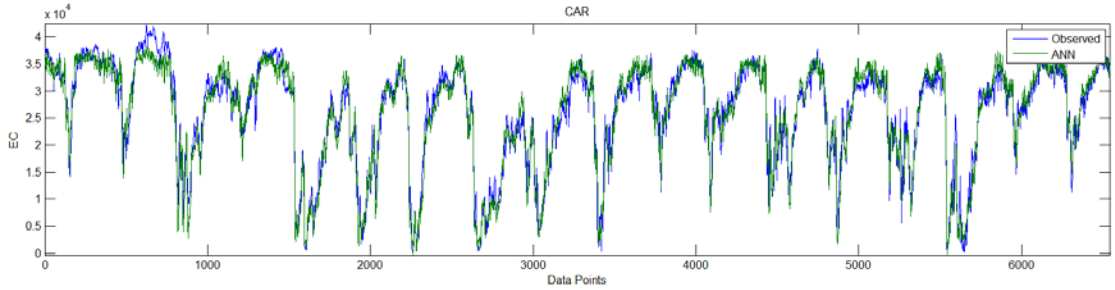
## SAN JOAQUIN MODEL

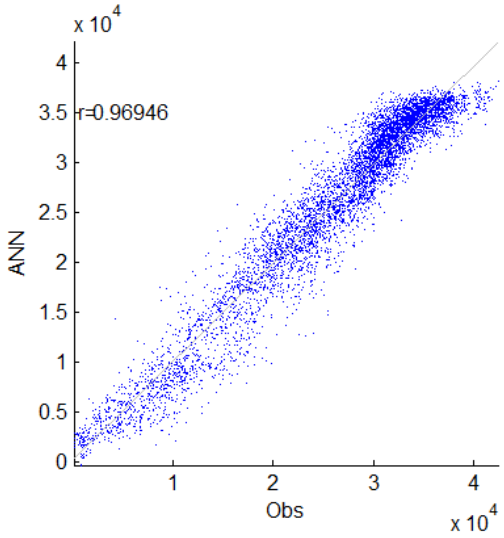
### MODEL 1

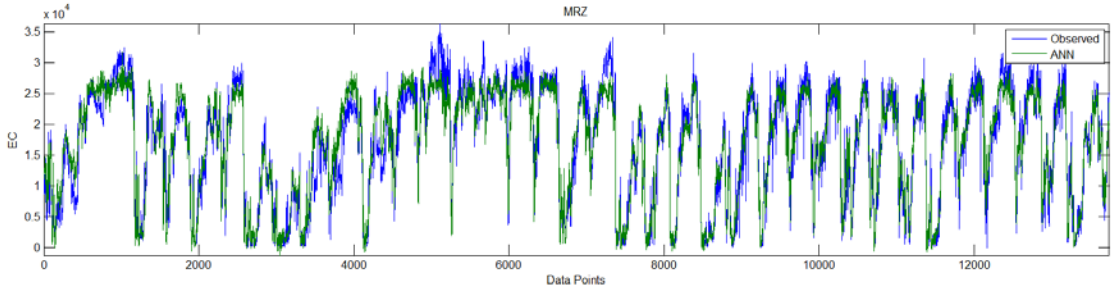
### *1 Flow Model*

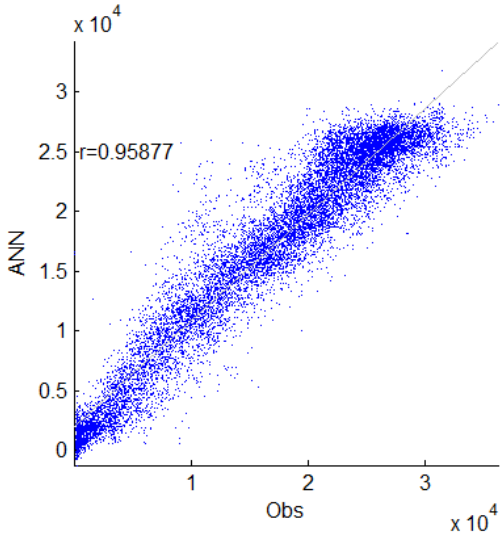


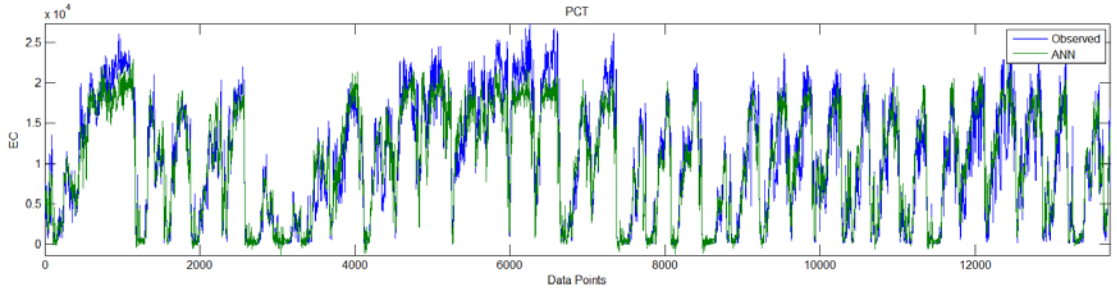



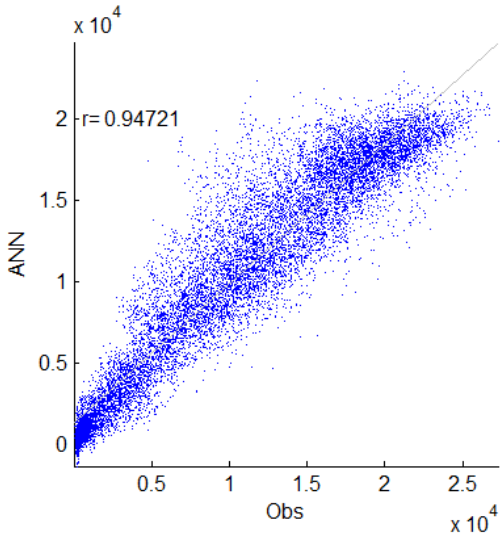



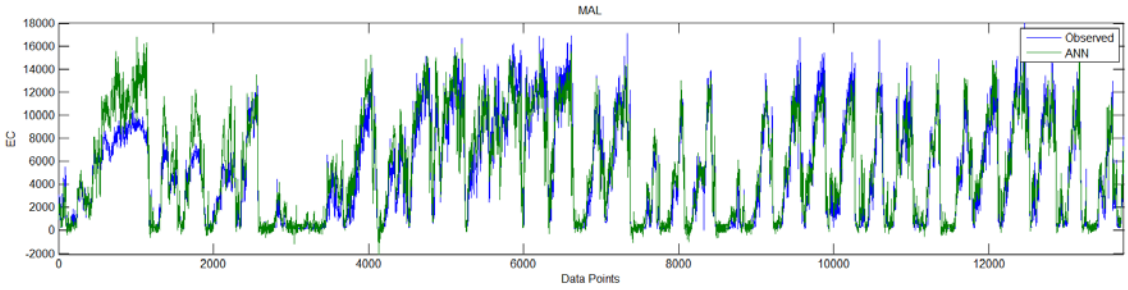

x 10^4
r=0.96946
ANN
Obs
x 10^4

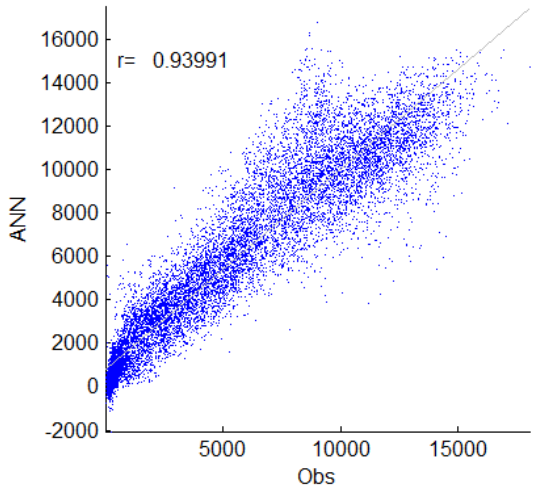

MRZ
Observed
ANN
EC
Data Points

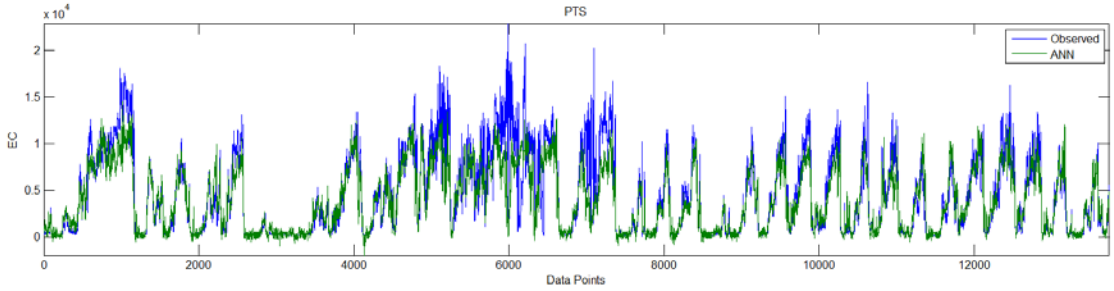

x 10^4
r=0.95877
ANN
Obs
x 10^4

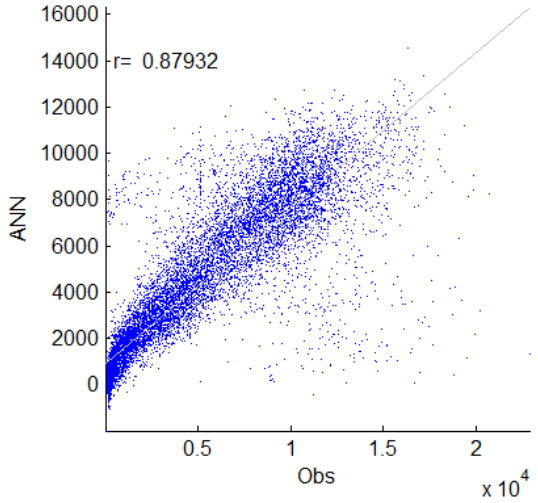

PCT
x 10^4
EC
Data Points
Observed
ANN

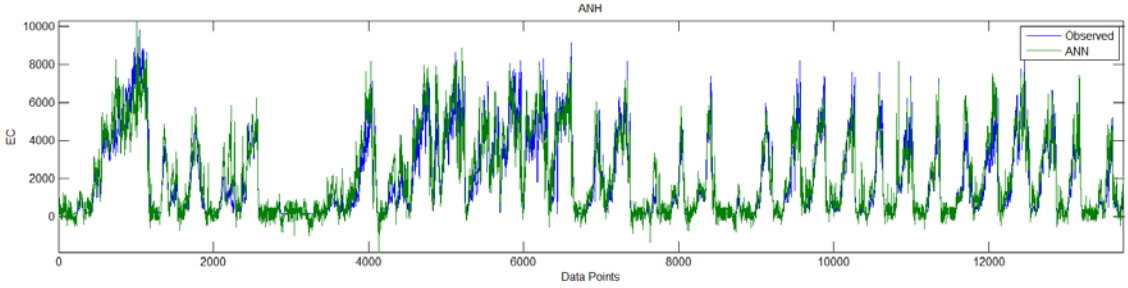

x 10^4
r= 0.94721
ANN
Obs
x 10^4

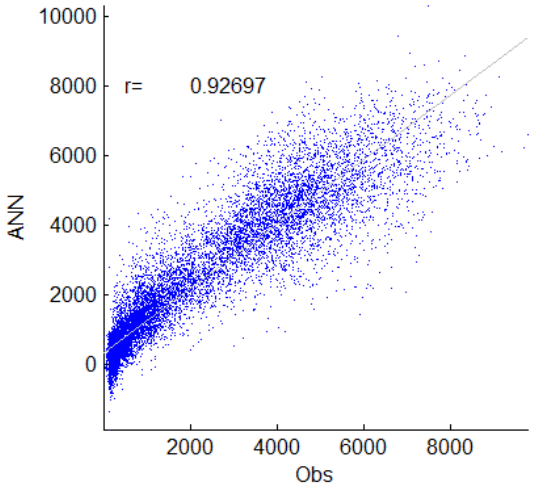

MAL
EC
Data Points
Observed
ANN

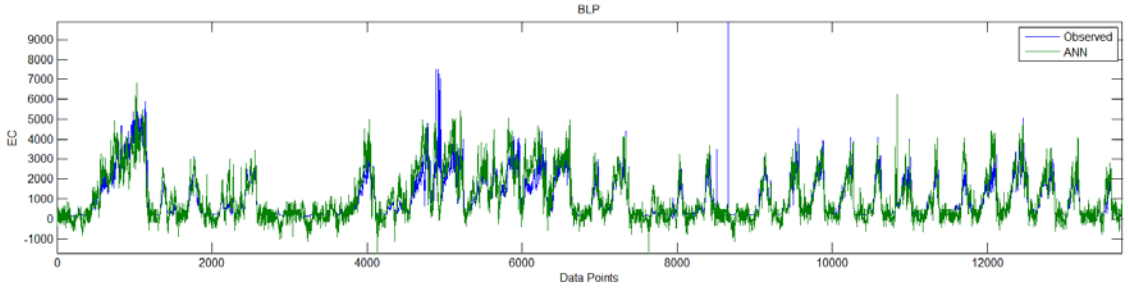

r= 0.93991
ANN
Obs
16000
14000
12000
10000
8000
6000
4000
2000
0
-2000
5000
10000
15000

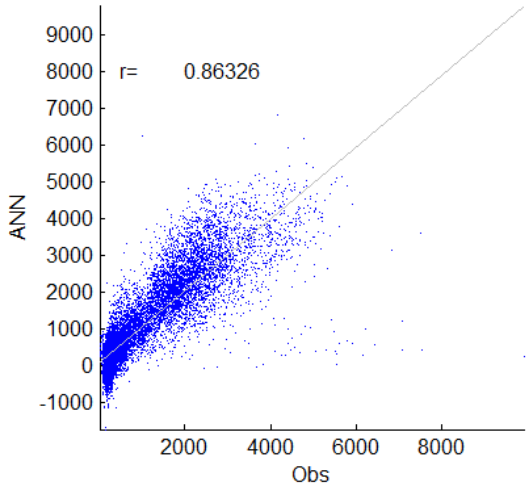

PTS
x 10^4
EC
Data Points
Observed
ANN
2
1.5
1
0.5
0
0
2000
4000
6000
8000
10000
12000

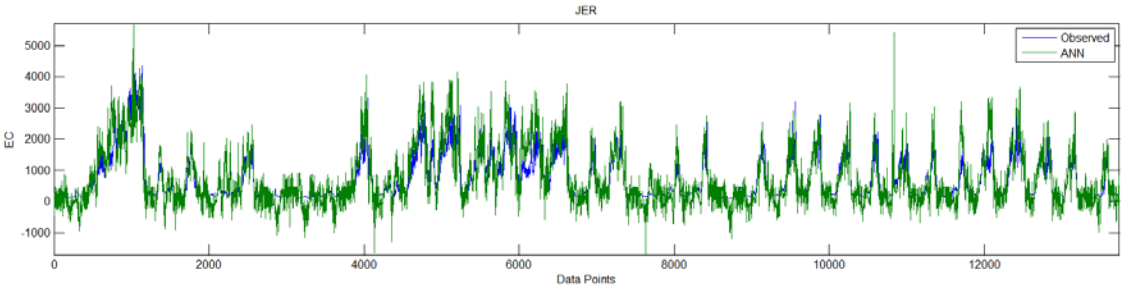

r= 0.87932
ANN
Obs
x 10^4
16000
14000
12000
10000
8000
6000
4000
2000
0
0.5
1
1.5
2

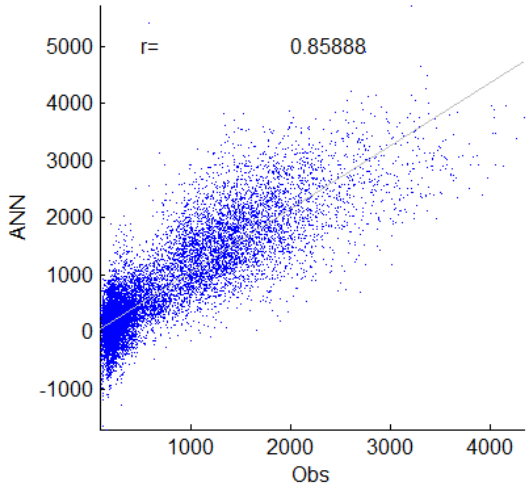

ANH
Observed
ANN
EC
Data Points

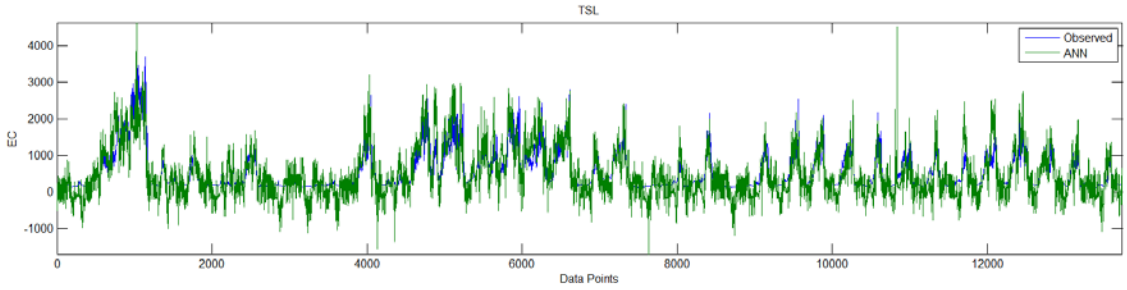

r= 0.92697
ANN
Obs

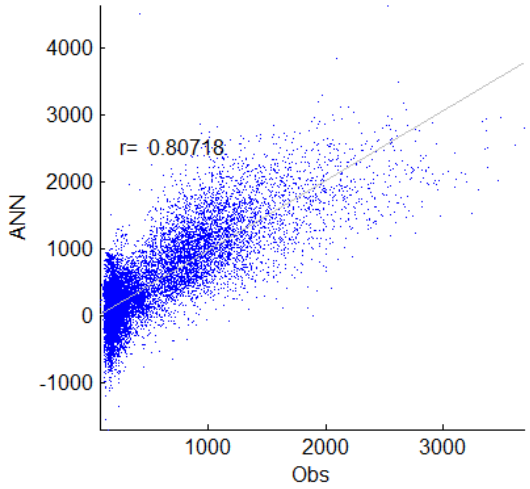

BLP
Observed
ANN
EC
Data Points

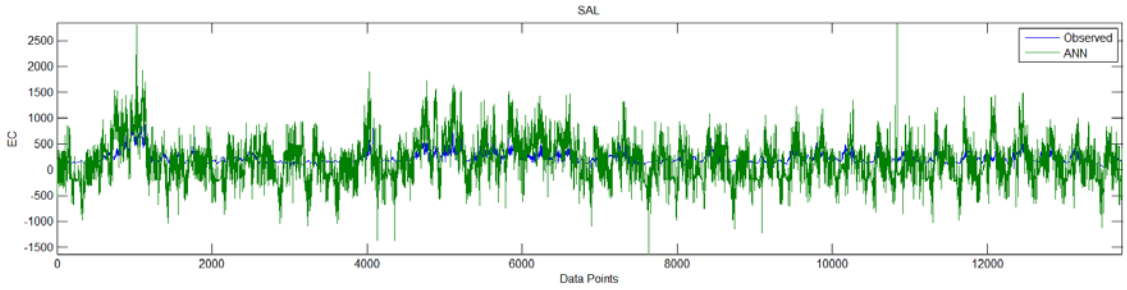

r= 0.86326
ANN
Obs
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
-1000
2000
4000
6000
8000

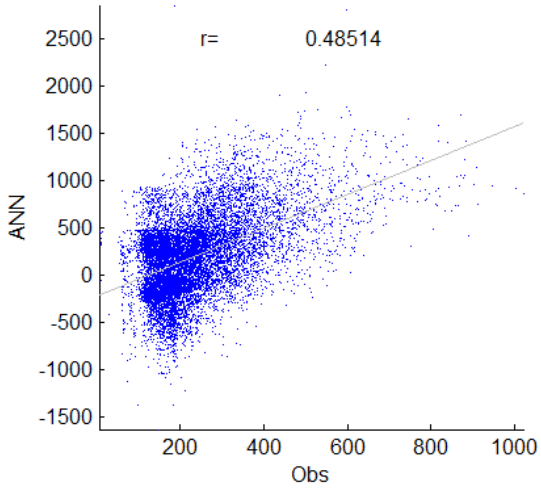

JER
Observed
ANN
EC
Data Points
5000
4000
3000
2000
1000
0
-1000
0
2000
4000
6000
8000
10000
12000


r= 0.85888
ANN
Obs
5000
4000
3000
2000
1000
0
-1000
1000
2000
3000
4000


TSL
Observed
ANN
EC
Data Points
4000
3000
2000
1000
0
-1000
0
2000
4000
6000
8000
10000
12000

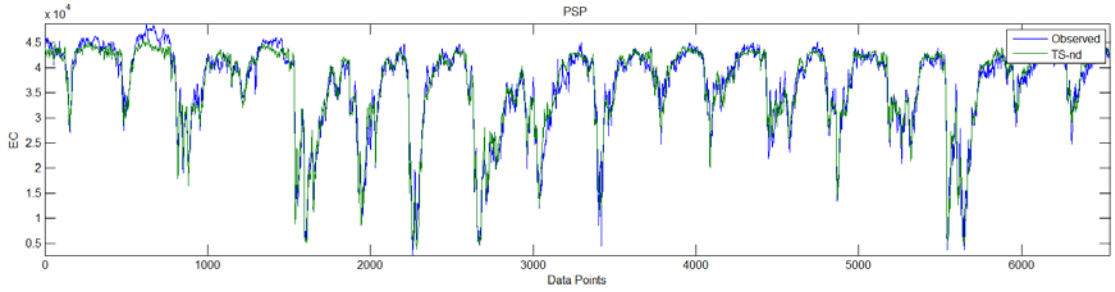

r= 0.80718
ANN
Obs
4000
3000
2000
1000
0
-1000
1000
2000
3000

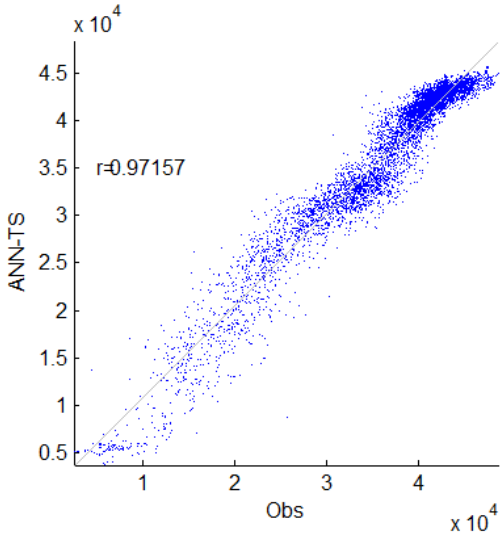

SAL
Observed
ANN
EC
Data Points
2500
2000
1500
1000
500
0
-500
-1000
-1500
0
2000
4000
6000
8000
10000
12000

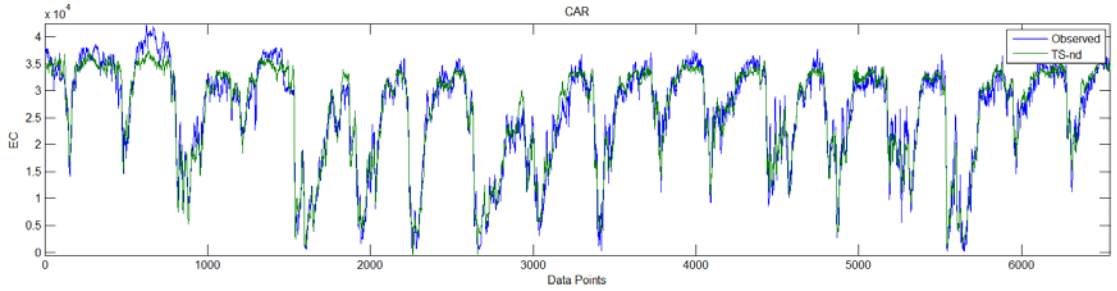

r= 0.48514
ANN
Obs
2500
2000
1500
1000
500
0
-500
-1000
-1500
200
400
600
800
1000

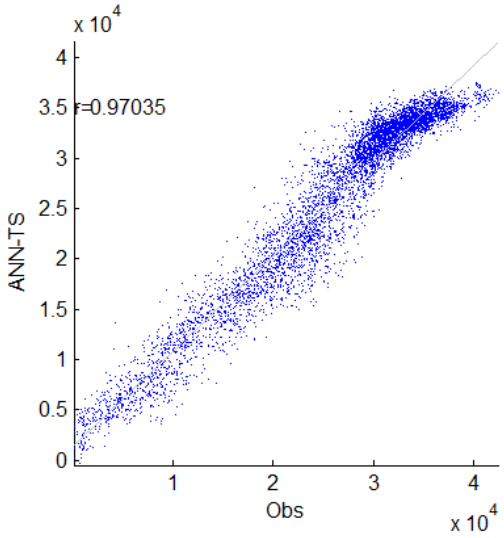
## MODEL 2

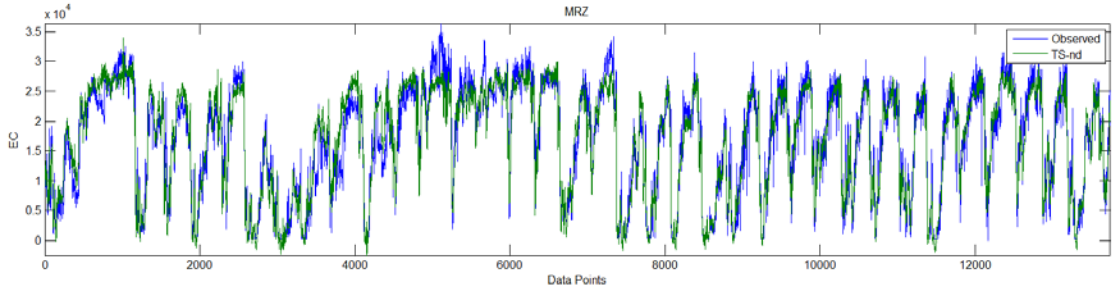
### *2 Flow*

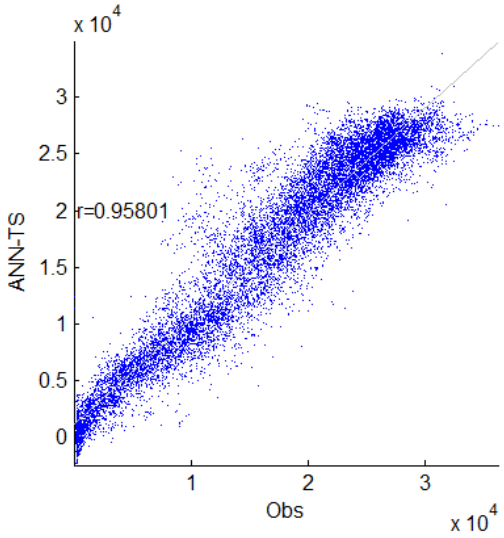


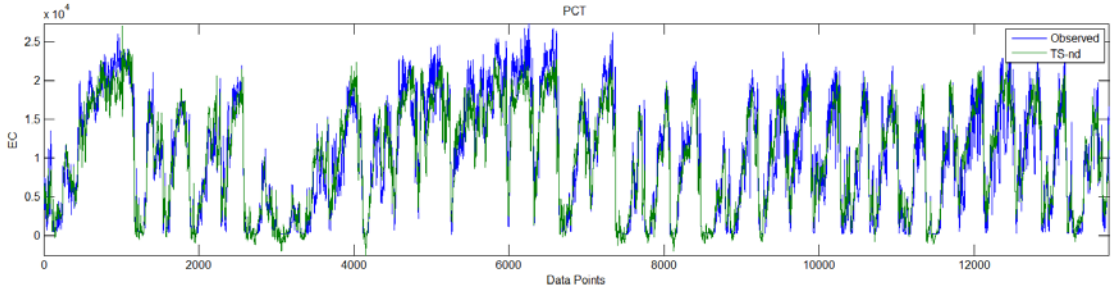



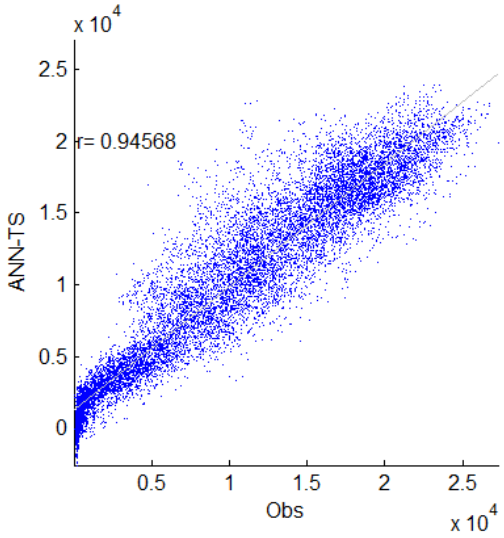

CAR
x 10^4
EC
Data Points
Observed
TS-nd

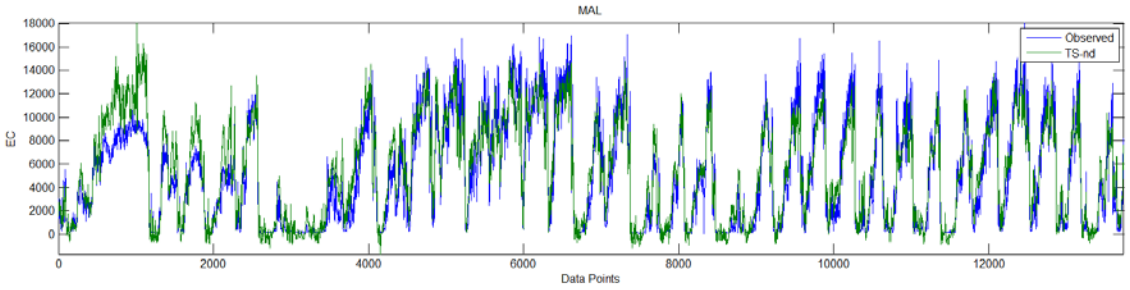

x 10^4
r=0.97035
ANN-TS
Obs
x 10^4

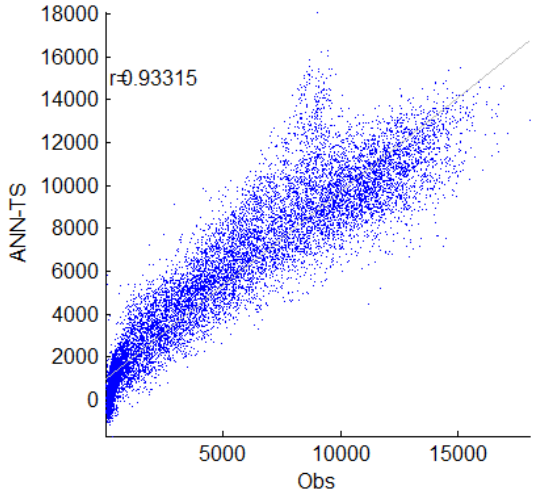

MRZ
x 10^4
EC
Data Points
Observed
TS-nd

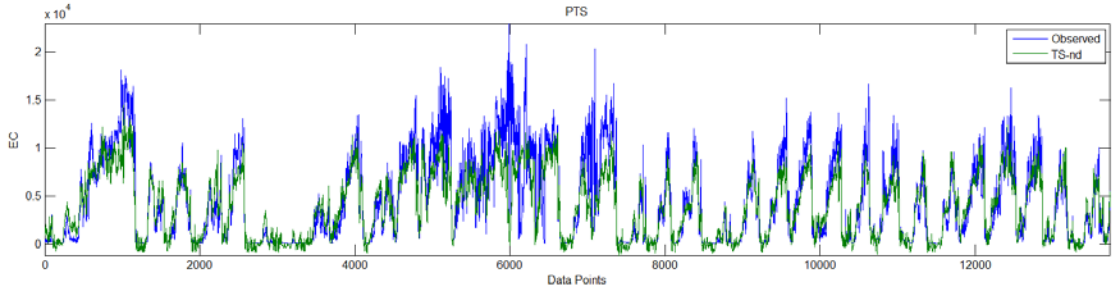

x 10^4
3
2.5
2
1.5
1
0.5
0
r=0.95801
ANN-TS
1
2
3
Obs
x 10^4

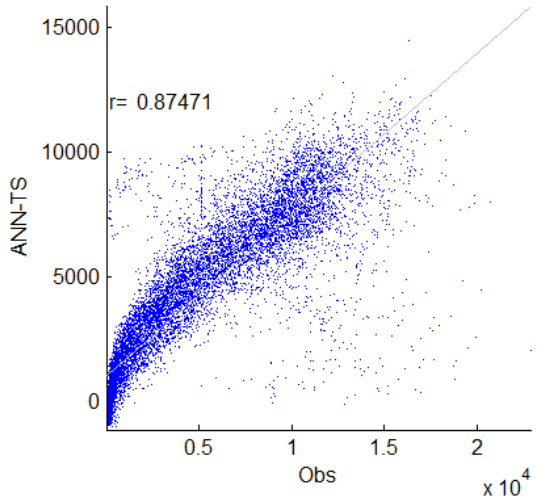

PCT
x 10^4
2.5
2
1.5
1
0.5
0
EC
0
2000
4000
6000
8000
10000
12000
Data Points
Observed
TS-nd

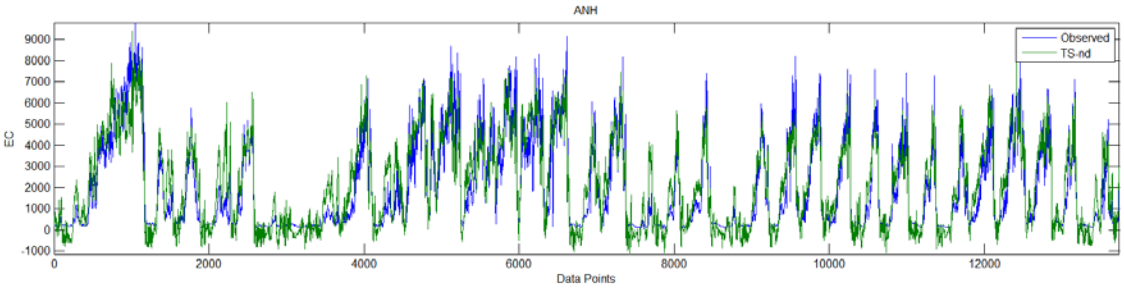

x 10^4
2.5
2
1.5
1
0.5
0
r= 0.94568
ANN-TS
0.5
1
1.5
2
2.5
Obs
x 10^4

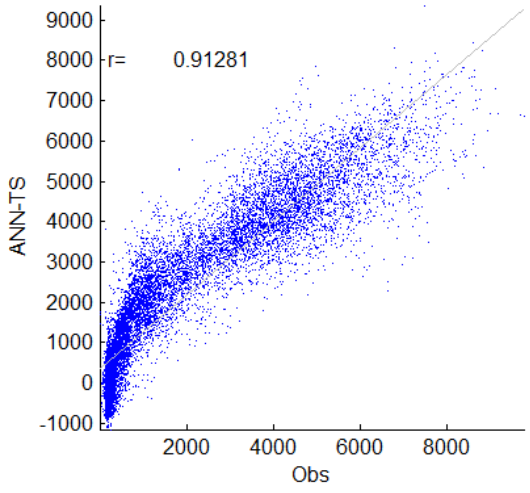

MAL
Observed
TS-nd
EC
Data Points

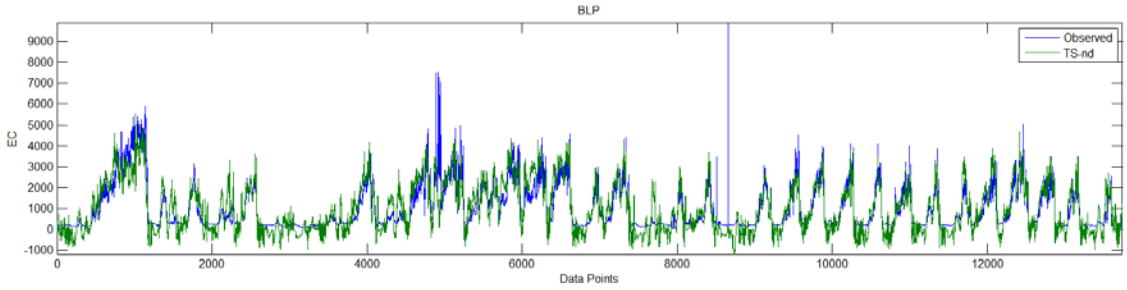

r=0.93315
ANN-TS
Obs

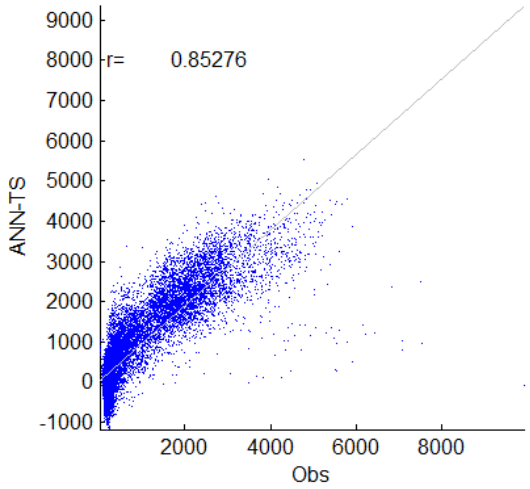

PTS
Observed
TS-nd
EC
Data Points

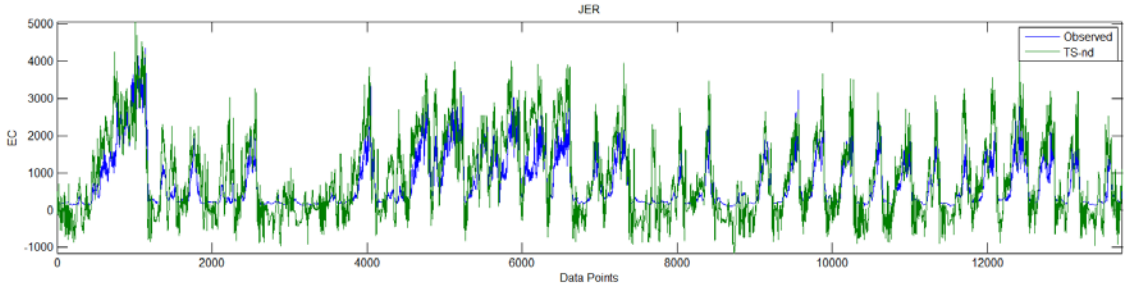

r= 0.87471
ANN-TS
Obs
x 10^4

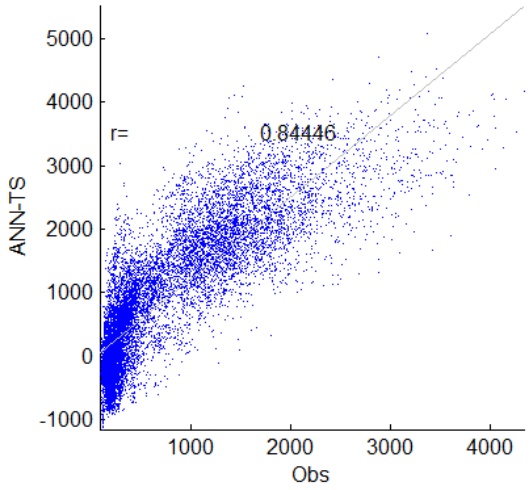

ANH
Observed
TS-nd
EC
Data Points

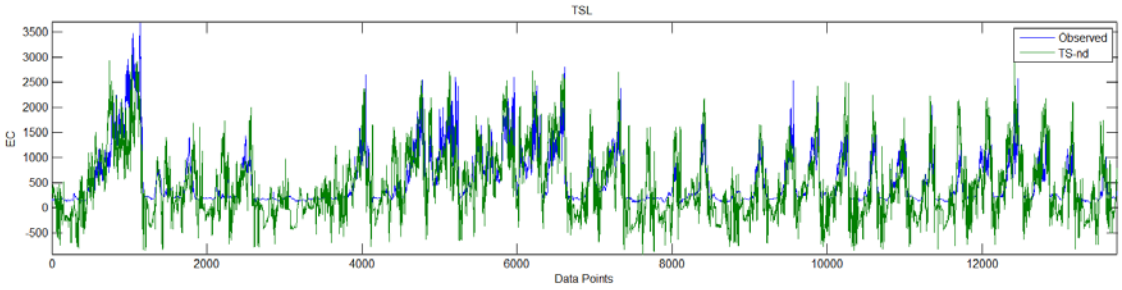

r= 0.91281
ANN-TS
Obs

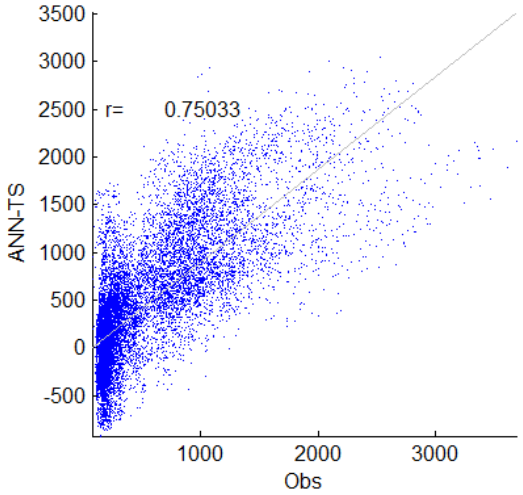

BLP
Observed
TS-nd
EC
Data Points

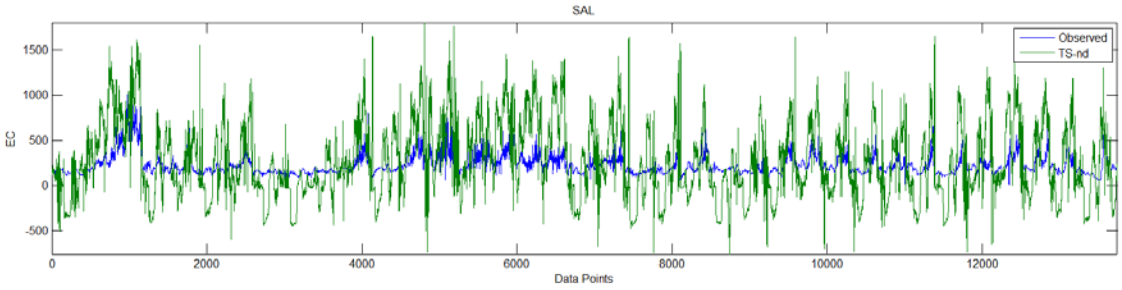

r= 0.85276
ANN-TS
Obs

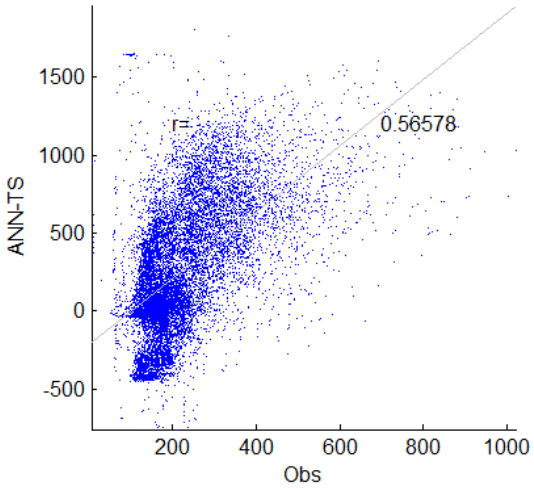

JER
Observed
TS-nd
EC
Data Points


r= 0.84446
ANN-TS
Obs
5000
4000
3000
2000
1000
0
-1000
1000
2000
3000
4000


TSL
Observed
TS-nd
EC
Data Points
3500
3000
2500
2000
1500
1000
500
0
-500
0
2000
4000
6000
8000
10000
12000

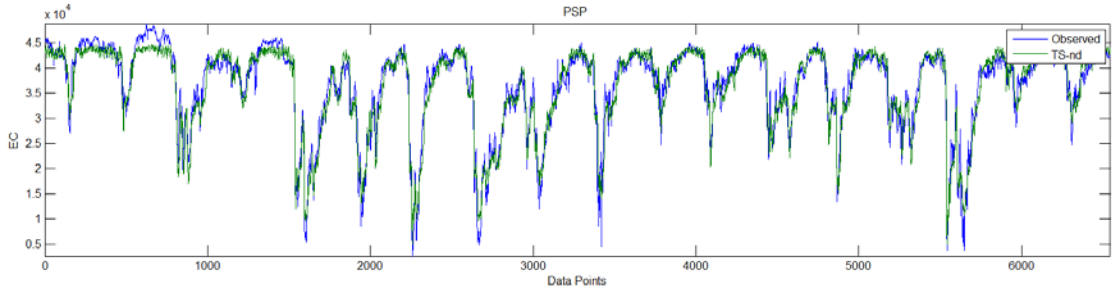

r= 0.75033
ANN-TS
Obs
3500
3000
2500
2000
1500
1000
500
0
-500
1000
2000
3000

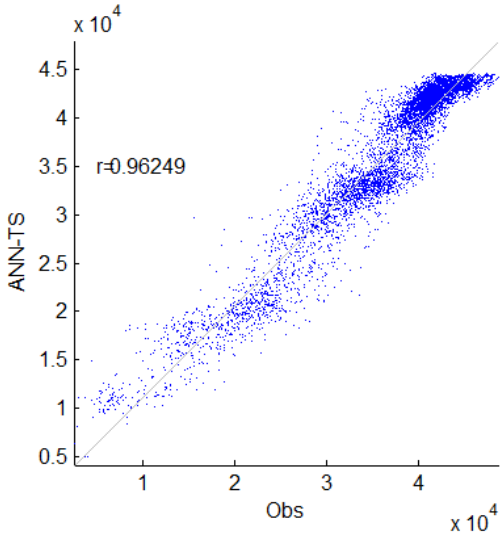

SAL
Observed
TS-nd
EC
1500
1000
500
0
-500
0
2000
4000
6000
8000
10000
12000
Data Points

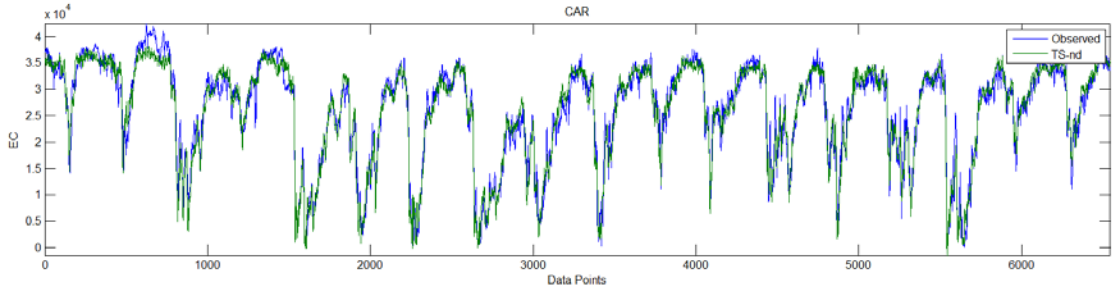

r=
0.56578
ANN-TS
1500
1000
500
0
-500
200
400
600
800
1000
Obs

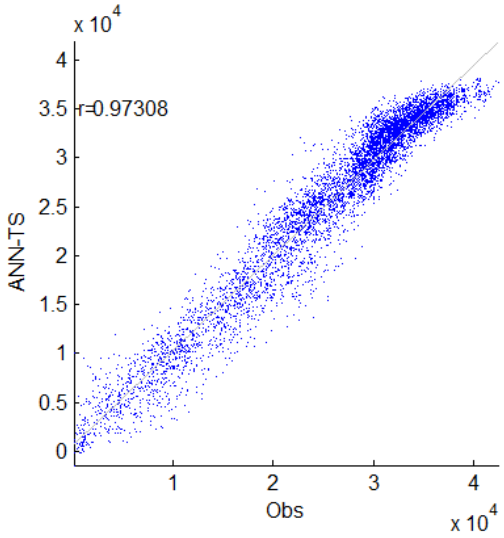
## MODEL 3

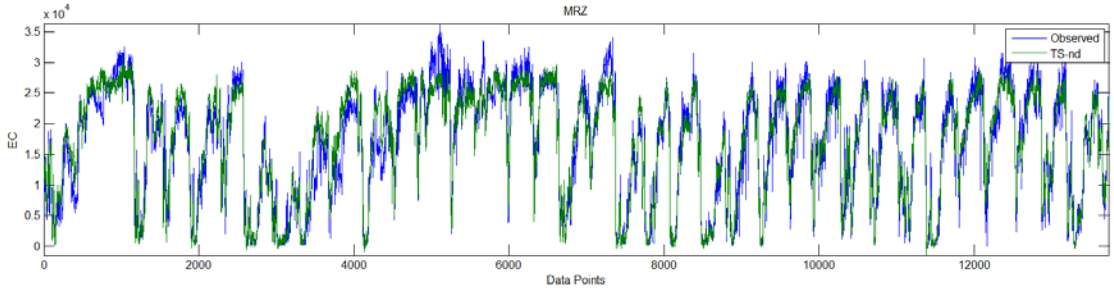
### *2 Flows, Qwest as residual*

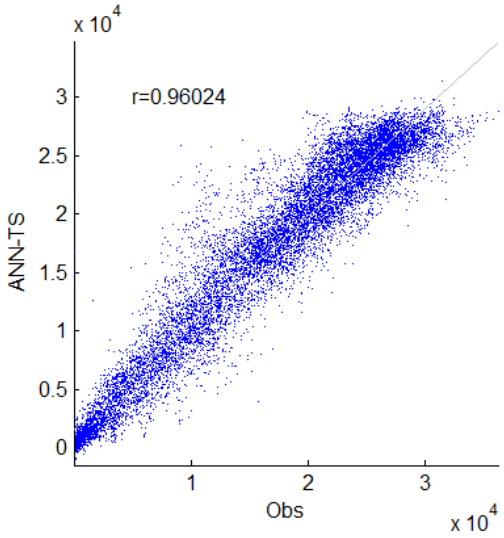


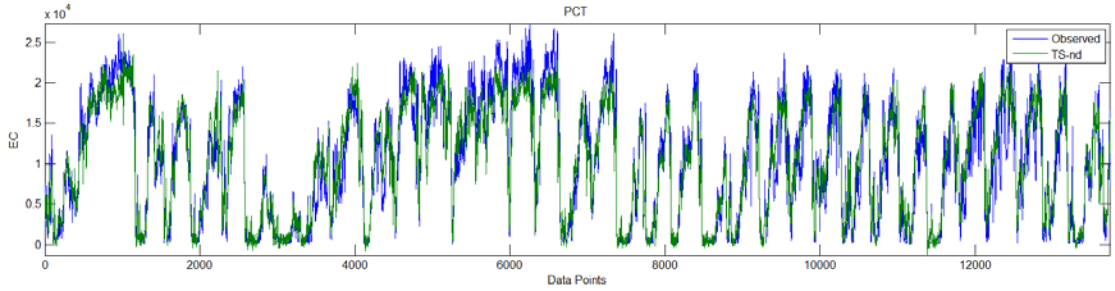



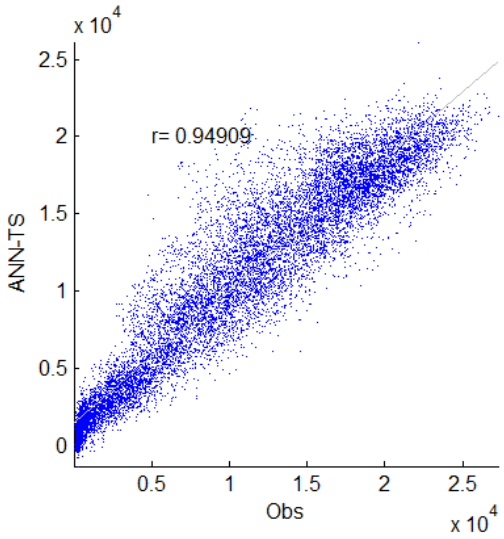



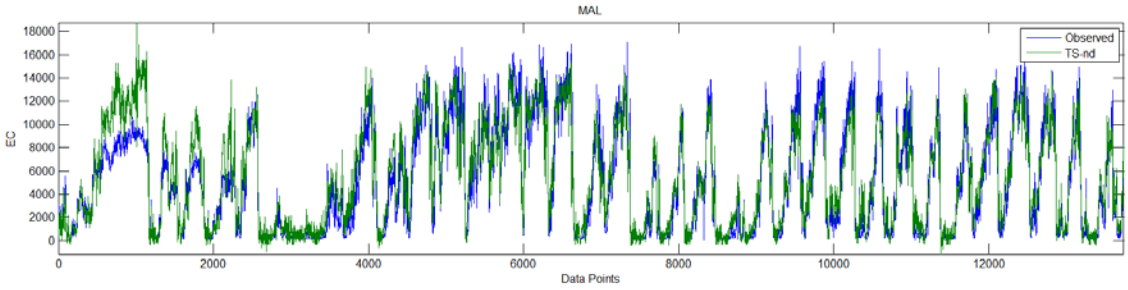

x 10^4
r=0.97308
ANN-TS
Obs
x 10^4

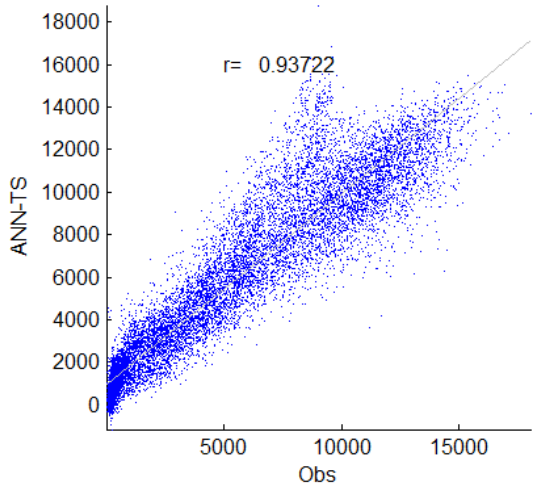

MRZ
Observed
TS-nd
EC
Data Points

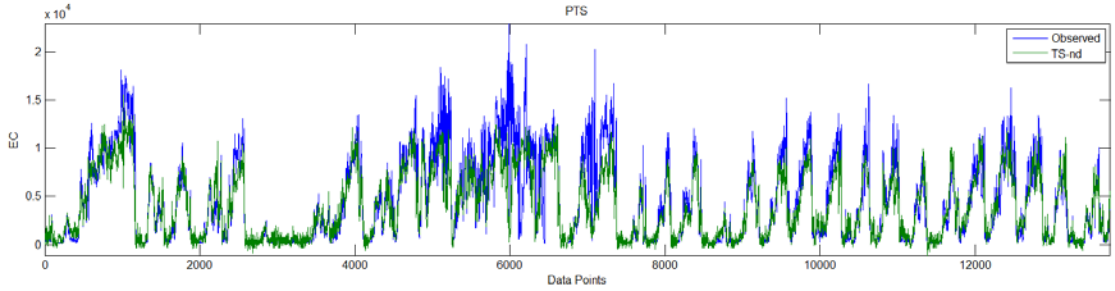

x 10^4
r=0.96024
ANN-TS
Obs
x 10^4

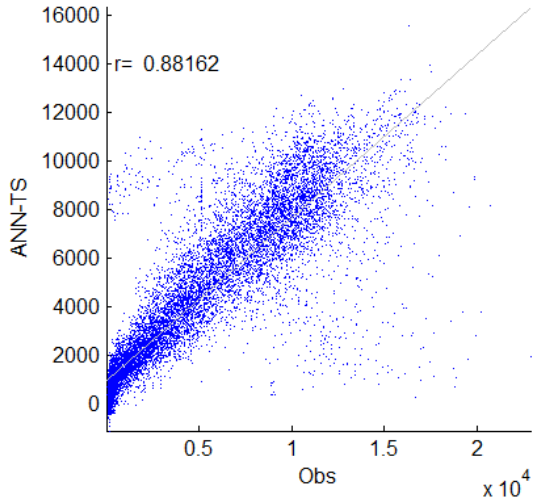

PCT
x 10^4
EC
Data Points
Observed
TS-nd

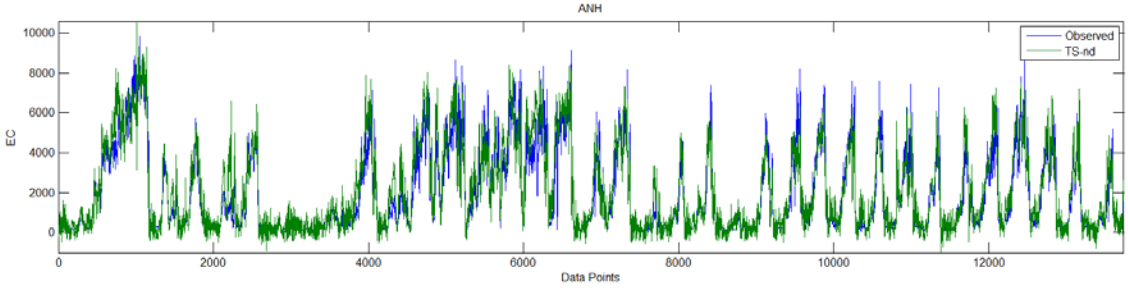

x 10^4
r= 0.94909
ANN-TS
Obs
x 10^4

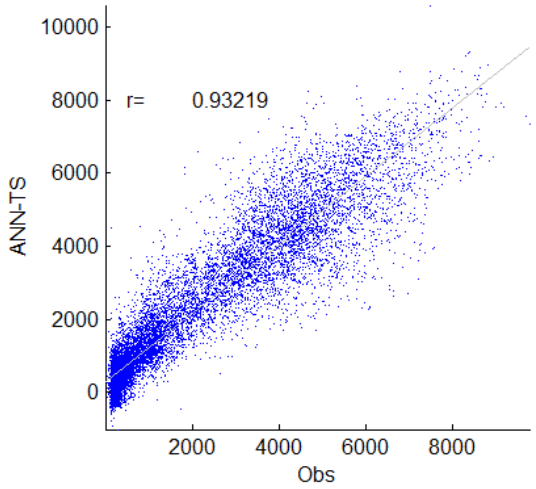

MAL
EC
Data Points
Observed
TS-nd

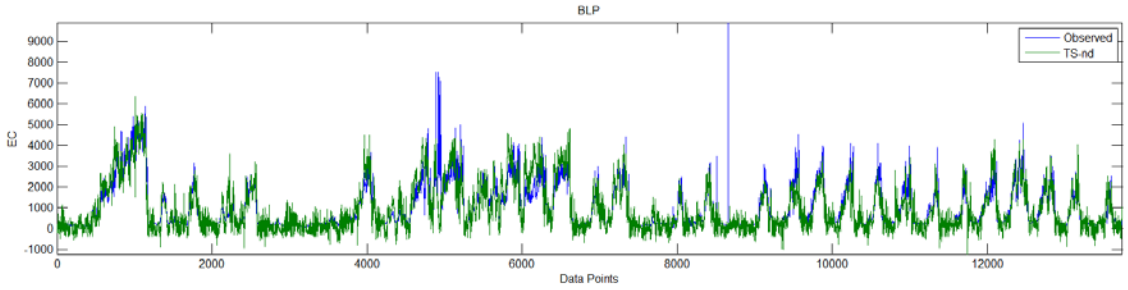

r= 0.93722
ANN-TS
Obs
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
5000
10000
15000

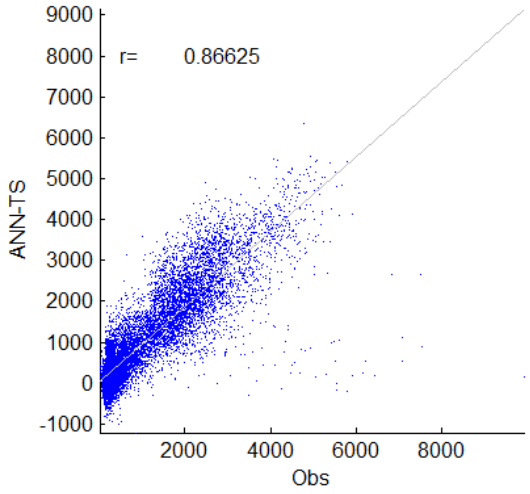

PTS
x 10^4
EC
Data Points
Observed
TS-nd
2
1.5
1
0.5
0
2000
4000
6000
8000
10000
12000

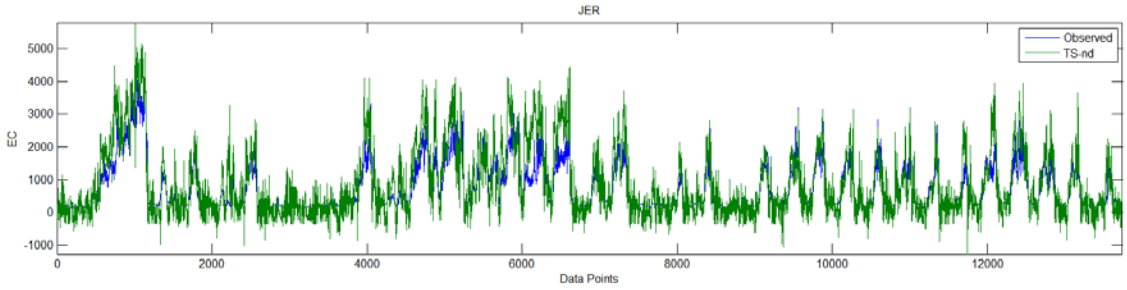

r= 0.88162
ANN-TS
Obs
x 10^4
16000
14000
12000
10000
8000
6000
4000
2000
0
0.5
1
1.5
2

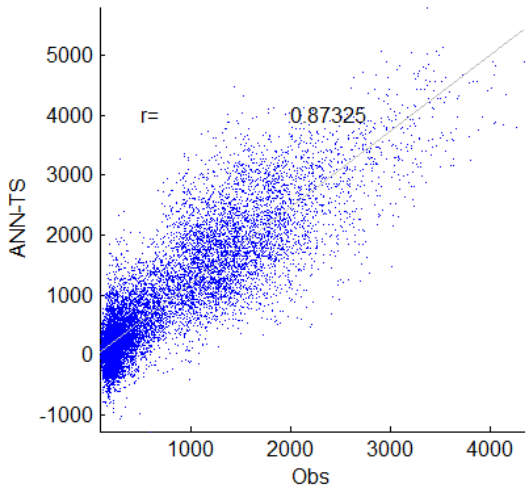

ANH
Observed
TS-nd
EC
Data Points

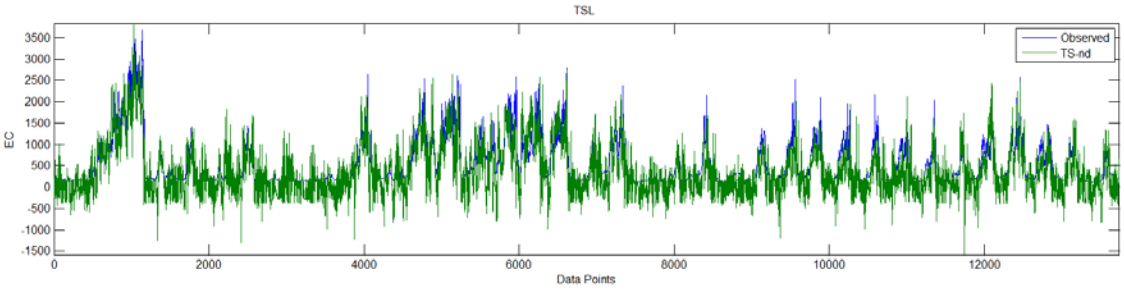

r= 0.93219
ANN-TS
Obs

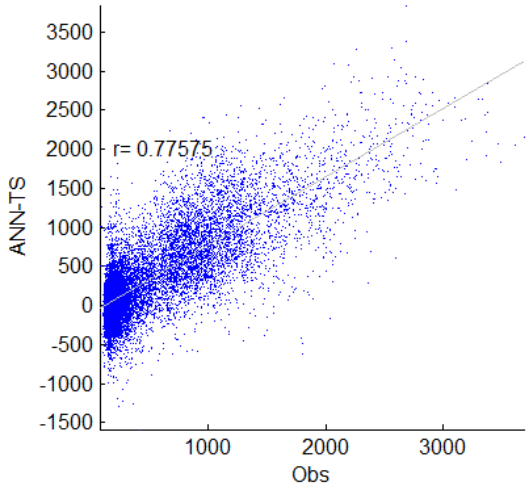

BLP
Observed
TS-nd
EC
Data Points


r= 0.86625
ANN-TS
Obs
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
-1000
2000
4000
6000
8000


JER
Observed
TS-nd
EC
Data Points
5000
4000
3000
2000
1000
0
-1000
0
2000
4000
6000
8000
10000
12000


r= 0.87325
ANN-TS
Obs
5000
4000
3000
2000
1000
0
-1000
1000
2000
3000
4000


TSL
Observed
TS-nd
EC
Data Points
3500
3000
2500
2000
1500
1000
500
0
-500
-1000
-1500
0
2000
4000
6000
8000
10000
12000


r= 0.77575
ANN-TS
Obs
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3000
2500
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1500
1000
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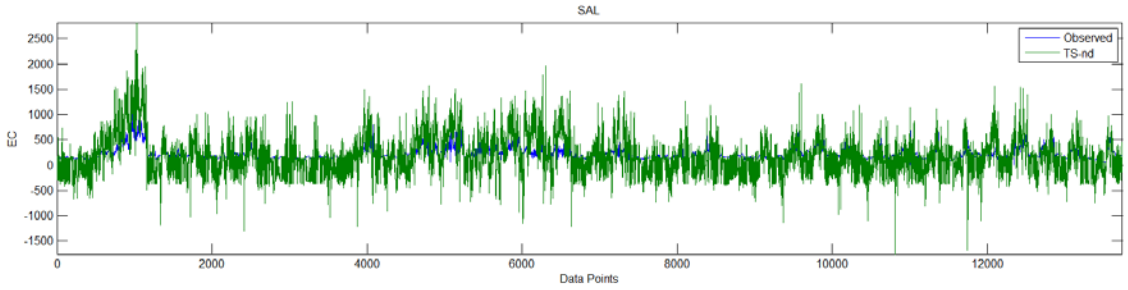
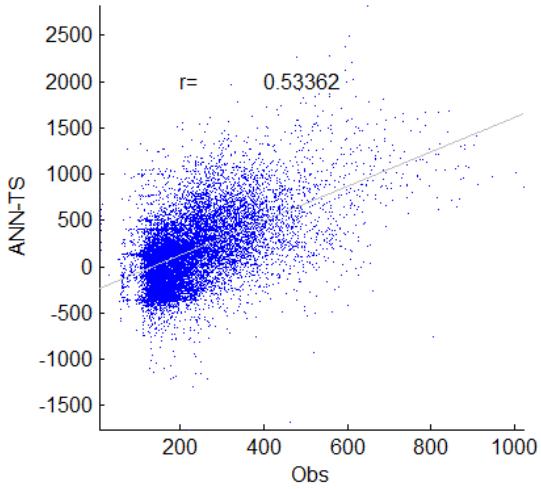
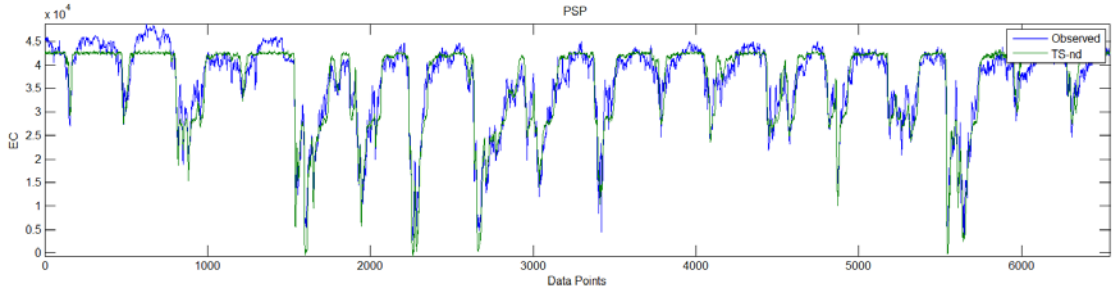
0
-500
-1000
-1500
1000
2000
3000

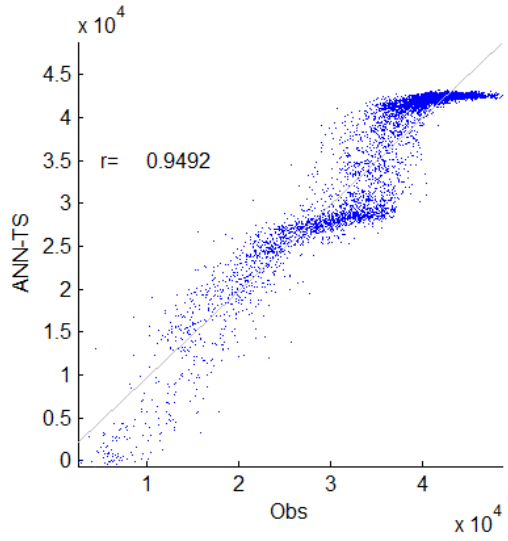

SAL
Observed
TS-nd
EC
Data Points
2500
2000
1500
1000
500
0
-500
-1000
-1500
0
2000
4000
6000
8000
10000
12000

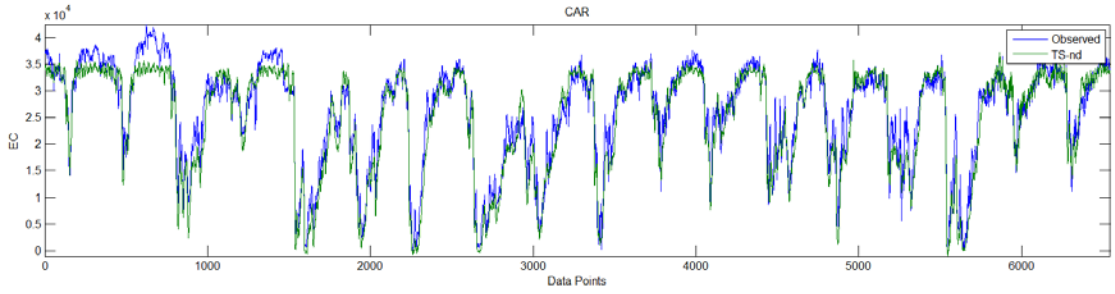

r= 0.53362
ANN-TS
Obs
2500
2000
1500
1000
500
0
-500
-1000
-1500
200
400
600
800
1000

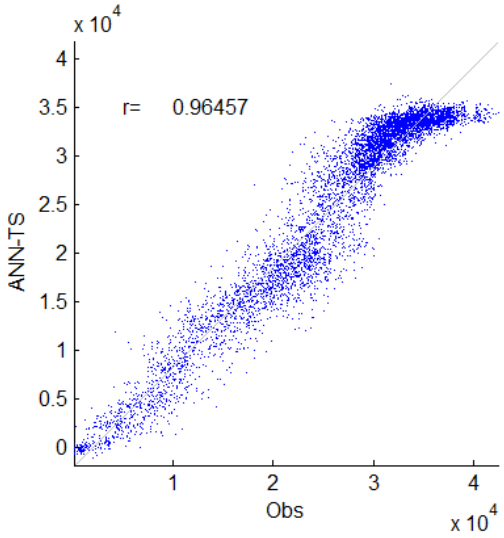
## MODEL 4

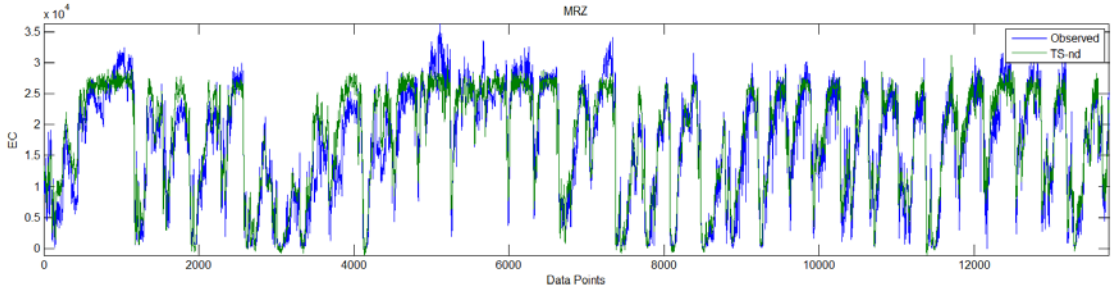
### *3 Tide*

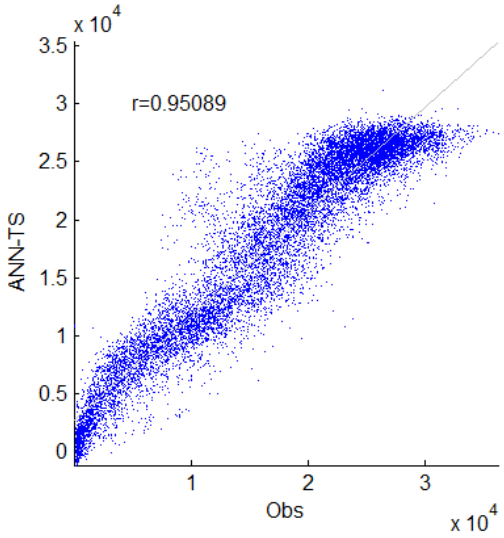


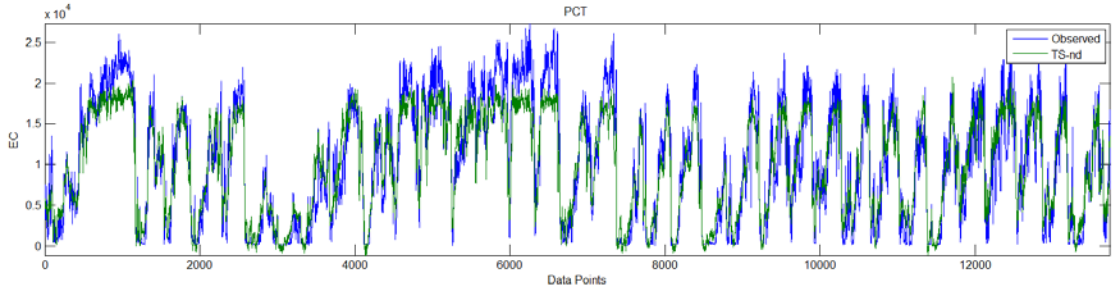



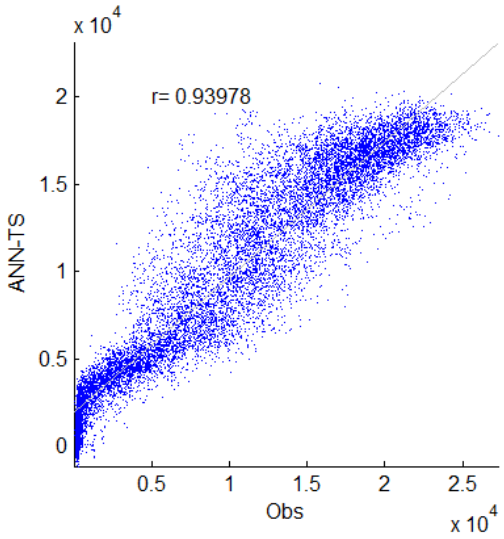



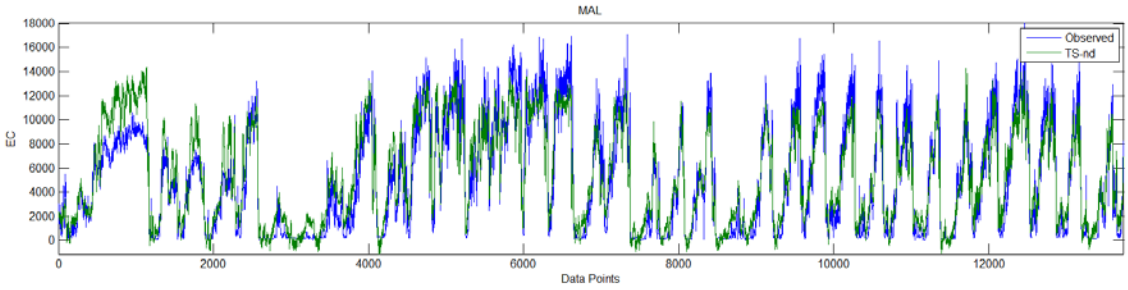

x 10^4
r= 0.96457
ANN-TS
Obs
x 10^4

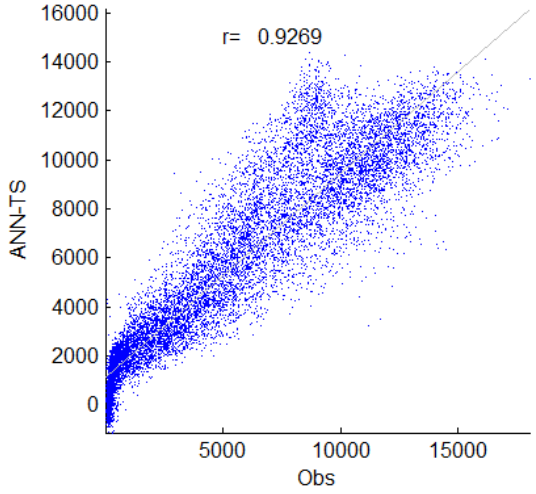

MRZ
Observed
TS-nd
EC
Data Points


x 10^4
r=0.95089
ANN-TS
Obs
x 10^4


PCT
x 10^4
EC
Data Points
Observed
TS-nd


x 10^4
r= 0.93978
ANN-TS
Obs
x 10^4


MAL
EC
Data Points
Observed
TS-nd


r= 0.9269
ANN-TS
Obs
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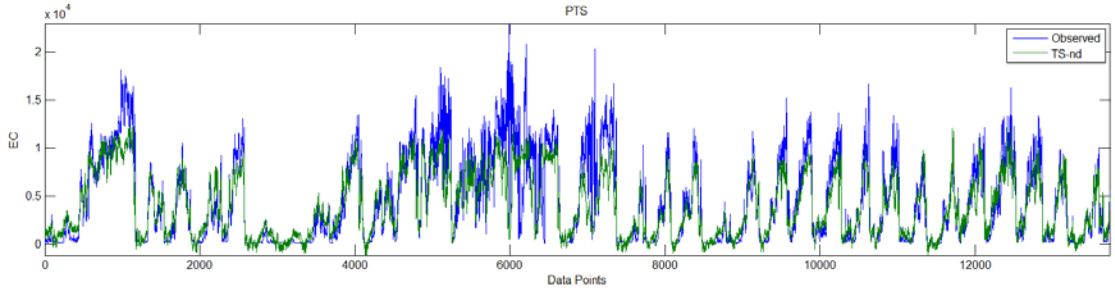
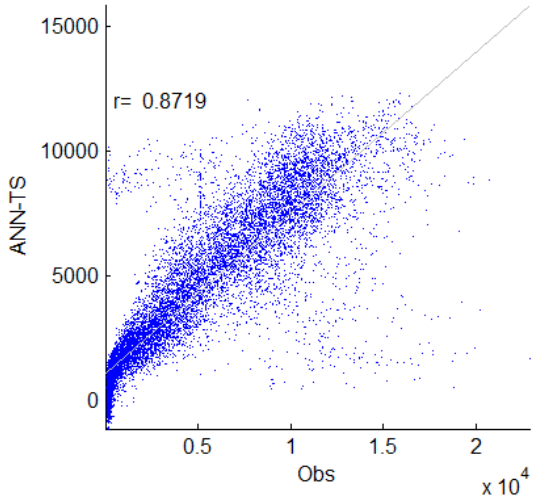
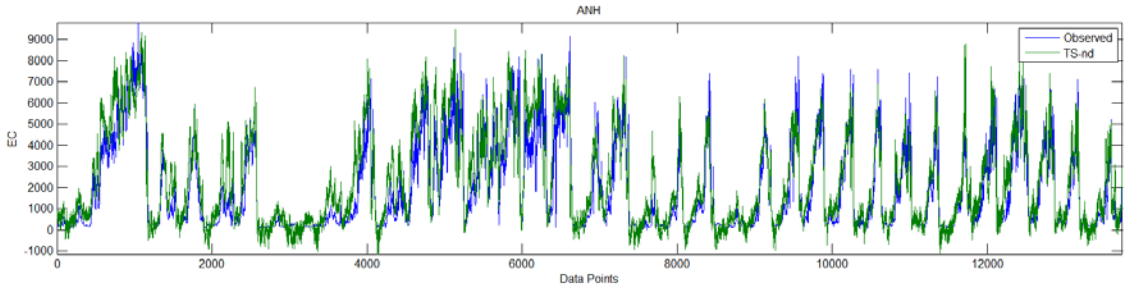
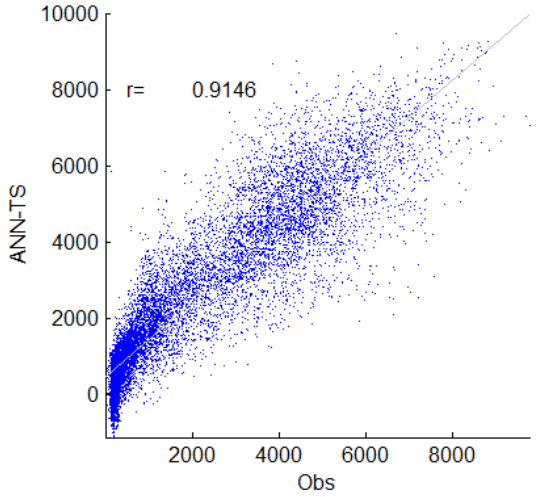
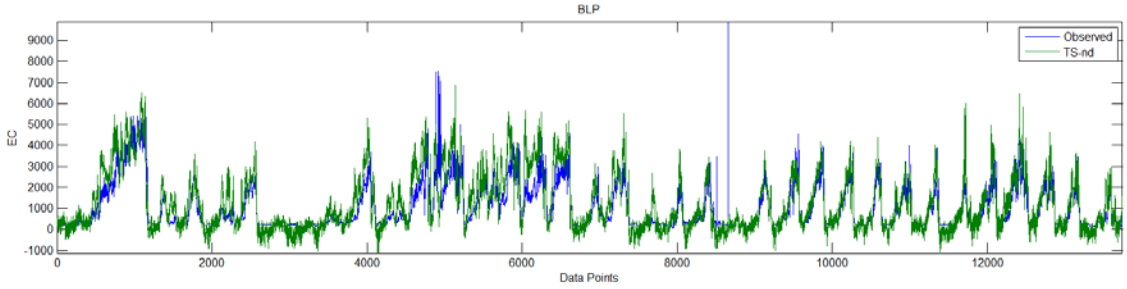
12000
10000
8000
6000
4000
2000
0
5000
10000
15000

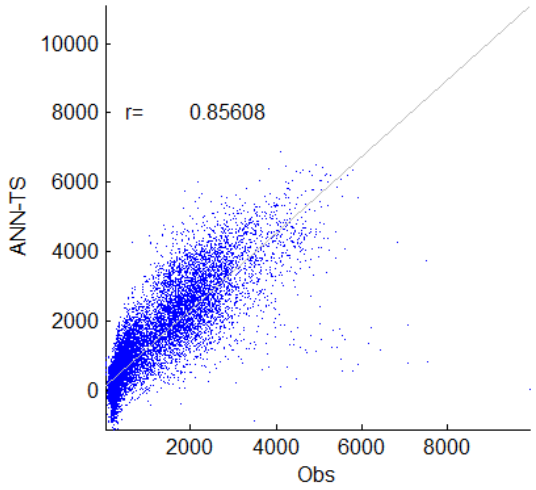

PTS
x 10^4
EC
Data Points
Observed
TS-nd
2
1.5
1
0.5
0
2000
4000
6000
8000
10000
12000

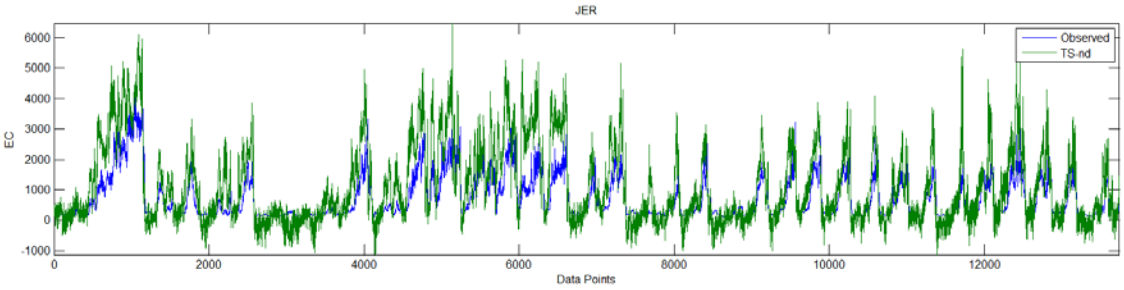

r= 0.8719
ANN-TS
Obs
x 10^4
15000
10000
5000
0
0.5
1
1.5
2

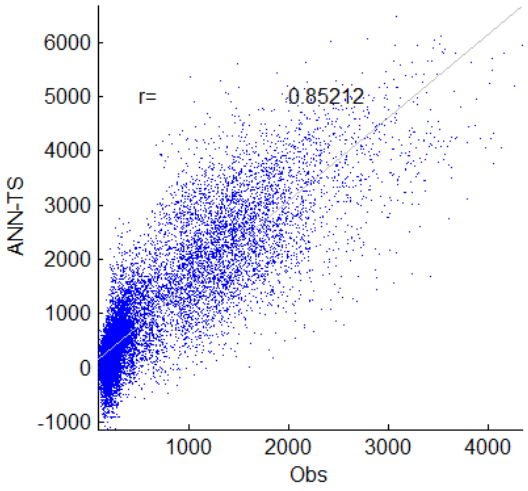

ANH
Observed
TS-nd
EC
Data Points


r= 0.9146
ANN-TS
Obs


BLP
Observed
TS-nd
EC
Data Points


r= 0.85608
ANN-TS
Obs
10000
8000
6000
4000
2000
0
2000
4000
6000
8000


JER
Observed
TS-nd
EC
Data Points
6000
5000
4000
3000
2000
1000
0
-1000
0
2000
4000
6000
8000
10000
12000


r= 0.85212
ANN-TS
Obs
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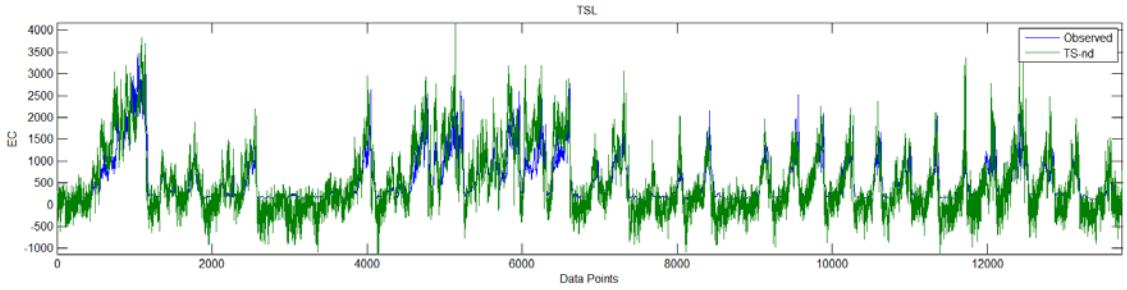
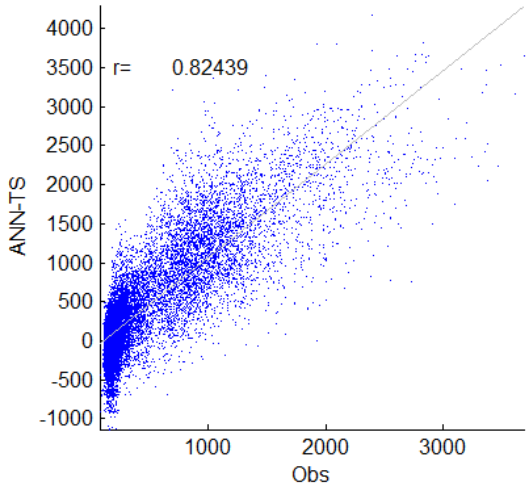
5000
4000
3000
2000
1000
0
-1000
1000
2000
3000
4000


TSL
Observed
TS-nd
EC
Data Points
4000
3500
3000
2500
2000
1500
1000
500
0
-500
-1000
0
2000
4000
6000
8000
10000
12000


r= 0.82439
ANN-TS
Obs
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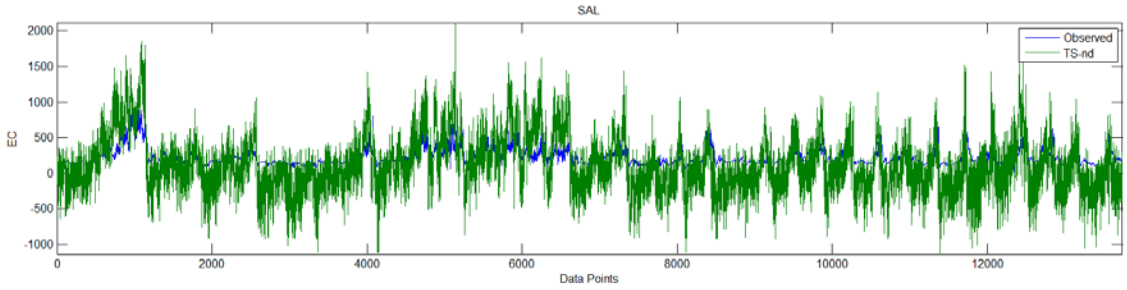
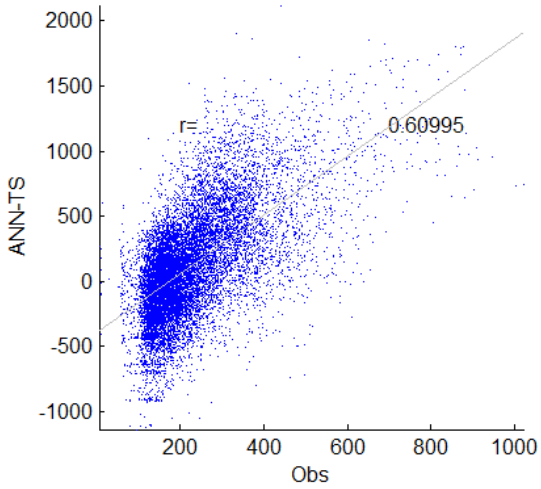
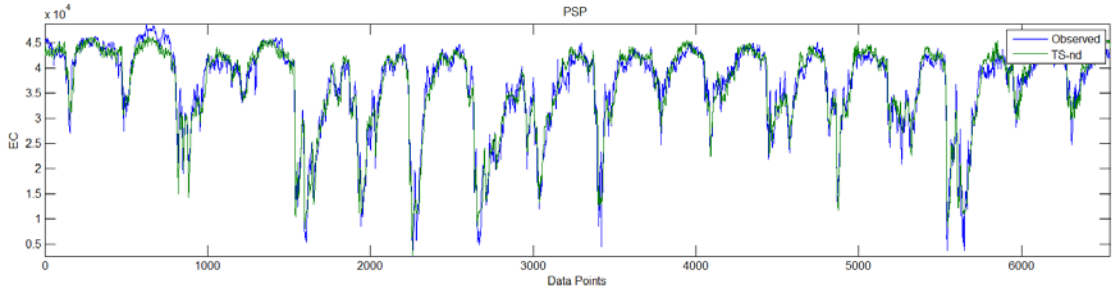
3500
3000
2500
2000
1500
1000
500
0
-500
-1000
1000
2000
3000

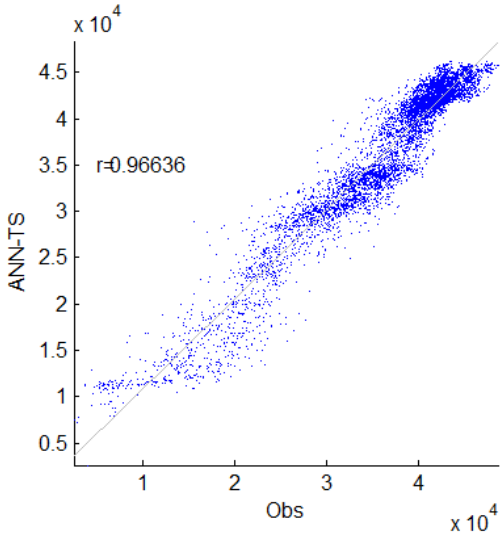

SAL
Observed
TS-nd
EC
Data Points
2000
1500
1000
500
0
-500
-1000
0
2000
4000
6000
8000
10000
12000

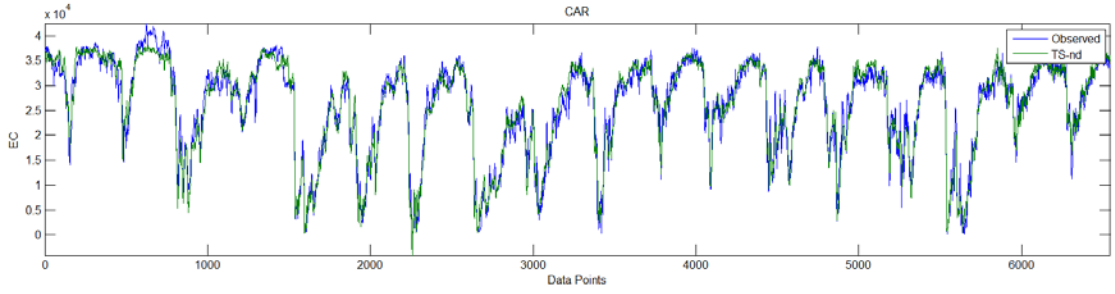

r=
0.60995
ANN-TS
Obs
2000
1500
1000
500
0
-500
-1000
200
400
600
800
1000

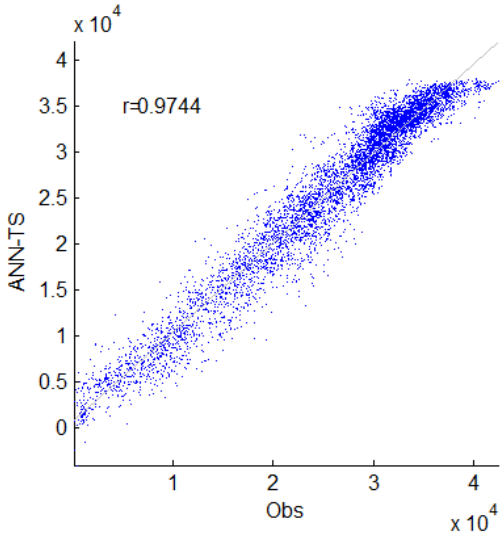
## MODEL 5

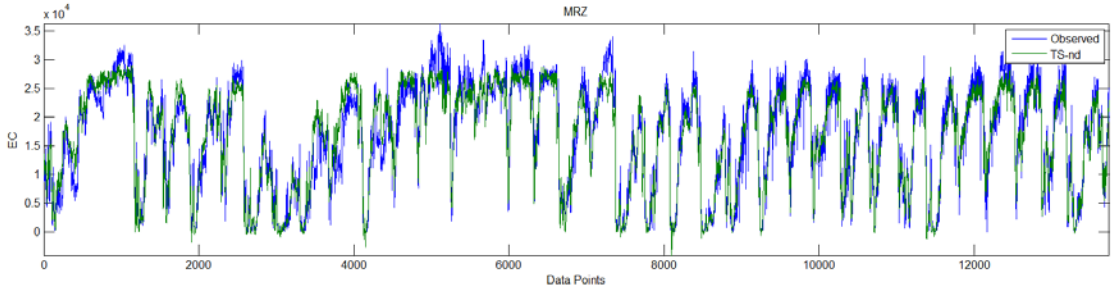
### *2 Tide*

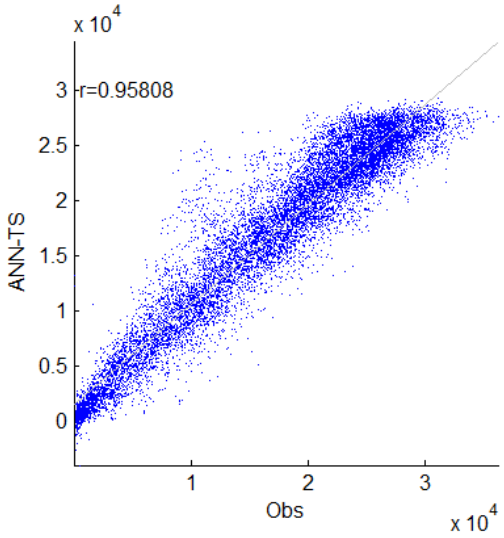


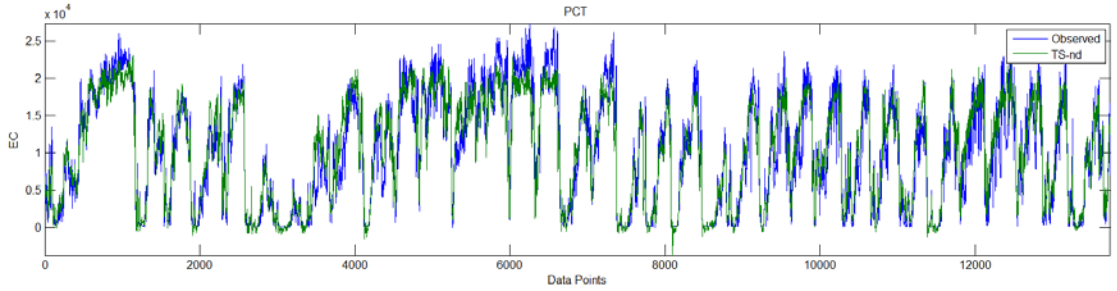



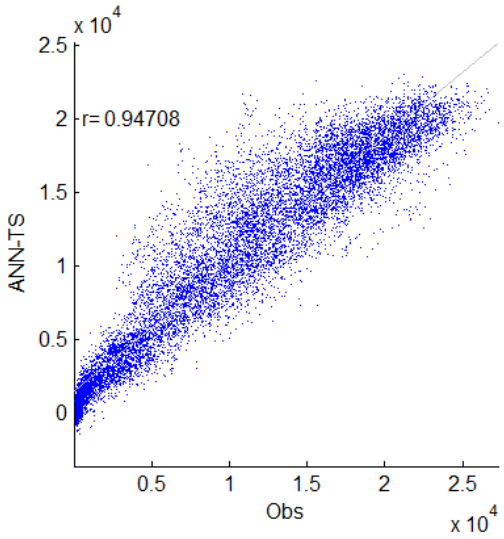



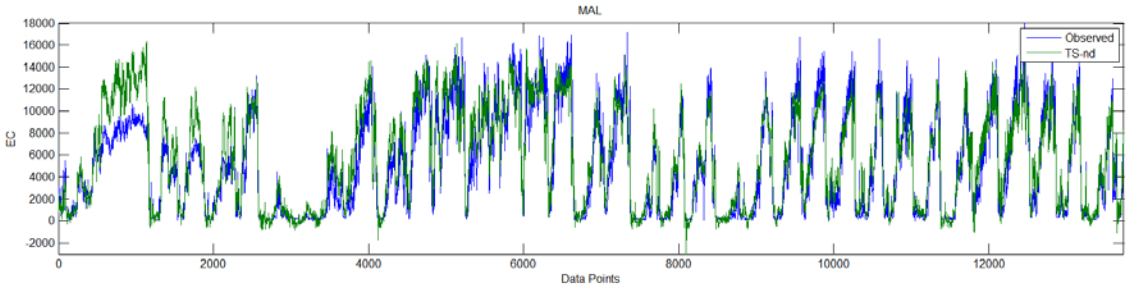

x 10^4
r=0.9744
ANN-TS
Obs
x 10^4

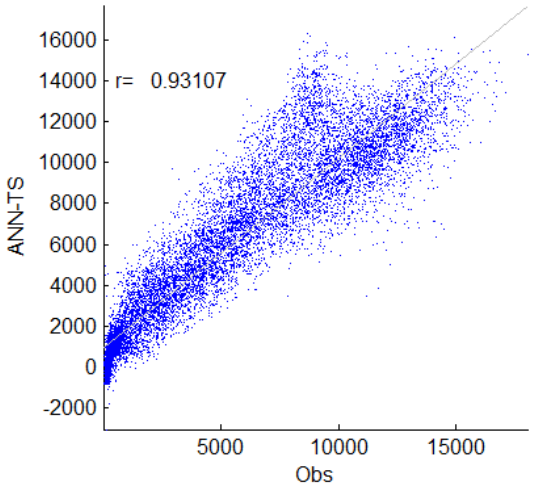

MRZ
x 10^4
EC
Data Points
Observed
TS-nd

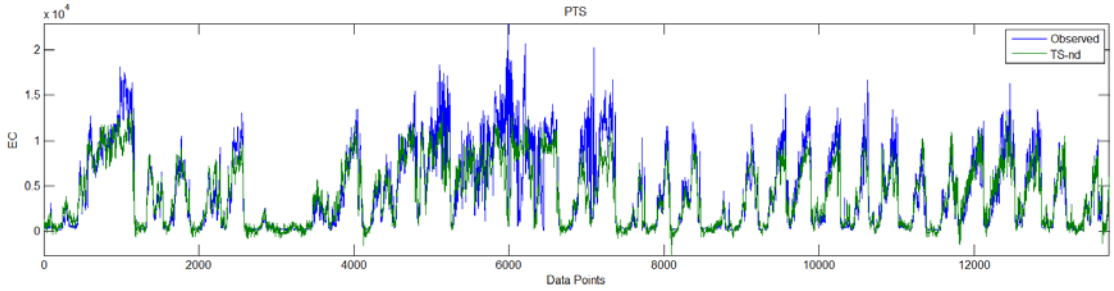

x 10^4
r=0.95808
ANN-TS
Obs
x 10^4

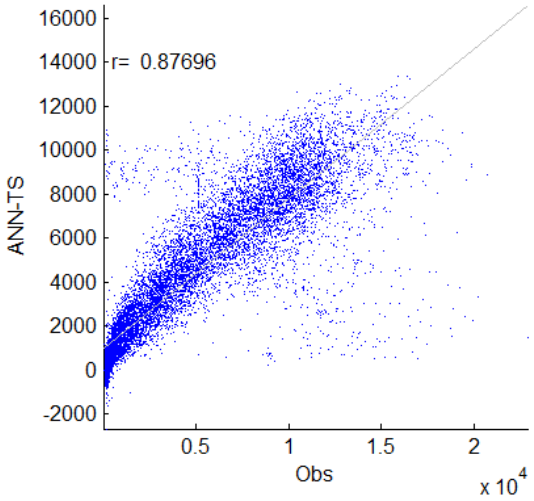

PCT
x 10^4
EC
Data Points
Observed
TS-nd

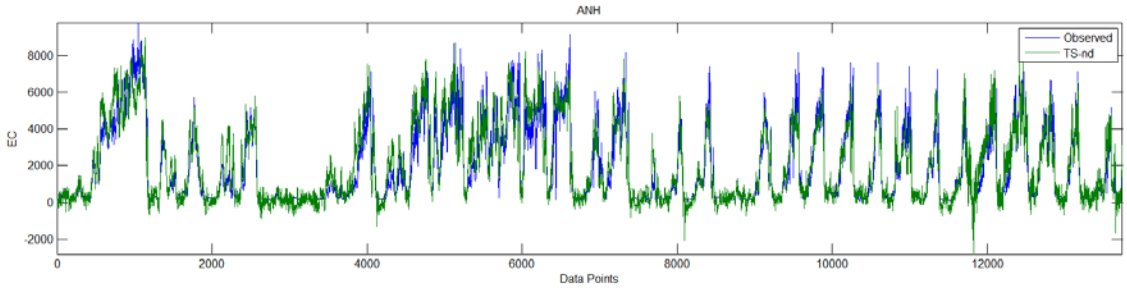

x 10^4
r= 0.94708
ANN-TS
Obs
x 10^4

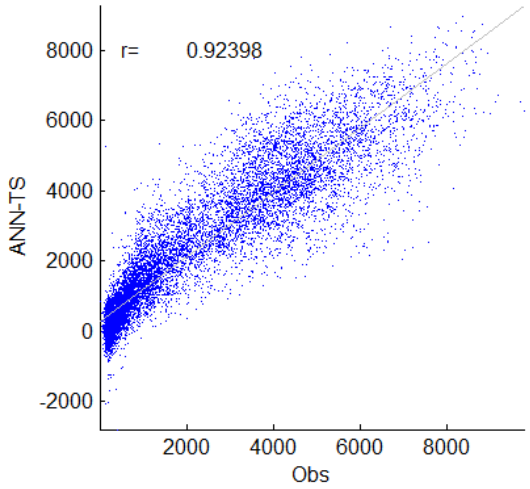

MAL
EC
Data Points
Observed
TS-nd

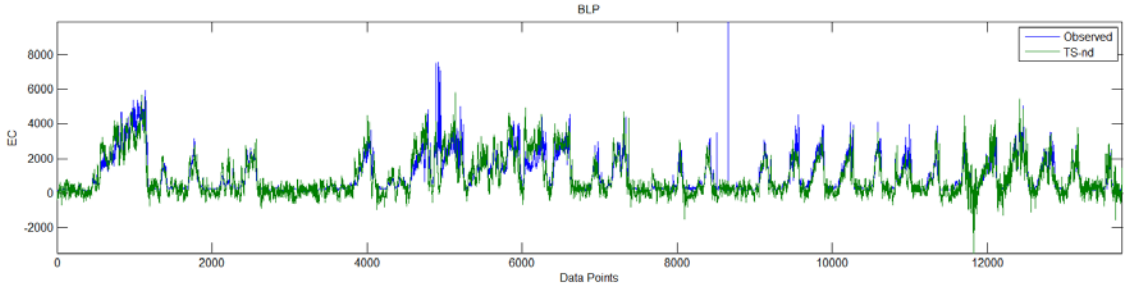

r= 0.93107
ANN-TS
Obs
16000
14000
12000
10000
8000
6000
4000
2000
0
-2000
5000
10000
15000

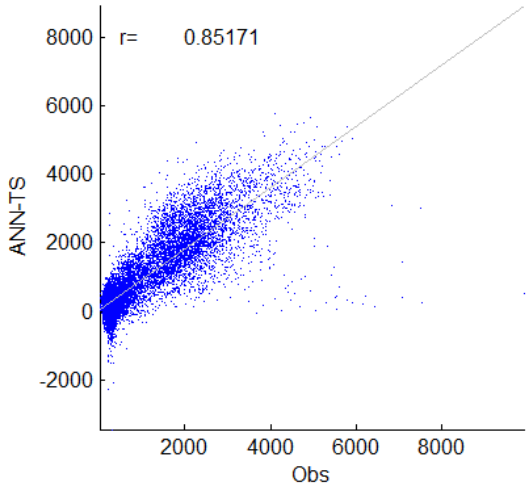

PTS
x 10^4
EC
Data Points
Observed
TS-nd
2
1.5
1
0.5
0
2000
4000
6000
8000
10000
12000

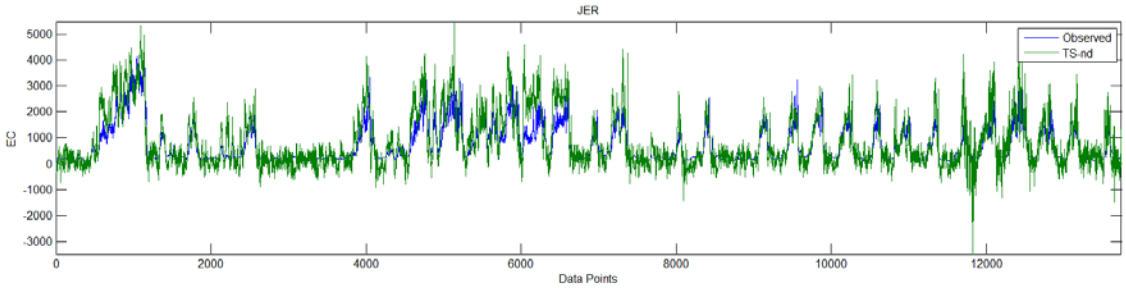

r= 0.87696
ANN-TS
Obs
x 10^4
16000
14000
12000
10000
8000
6000
4000
2000
0
-2000
0.5
1
1.5
2

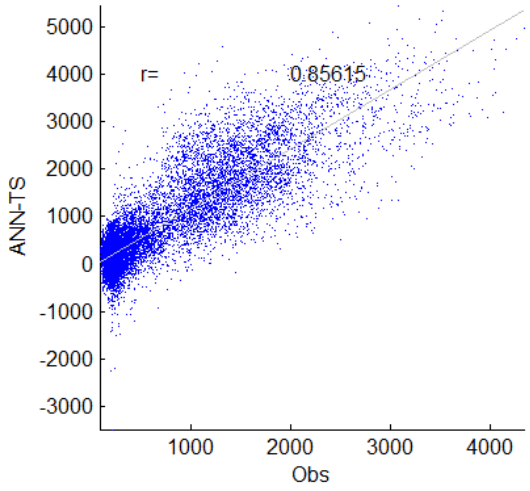

ANH
Observed
TS-nd
EC
Data Points

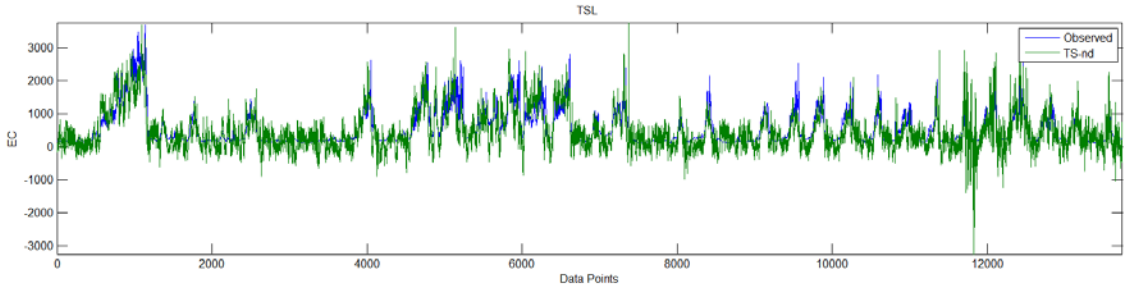

r= 0.92398
ANN-TS
Obs

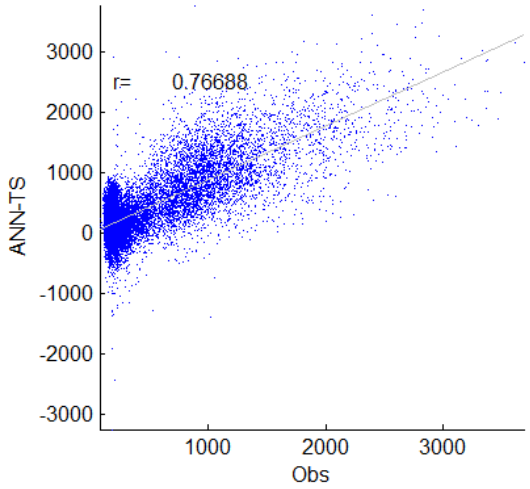

BLP
Observed
TS-nd
EC
Data Points

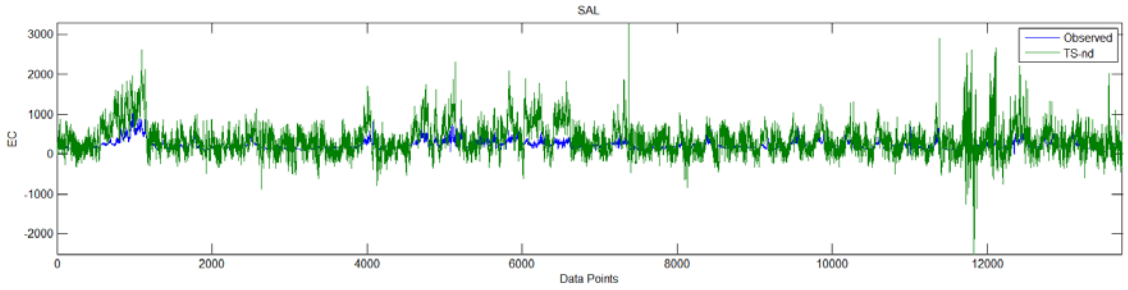

r= 0.85171
ANN-TS
Obs
8000
6000
4000
2000
0
-2000
2000
4000
6000
8000

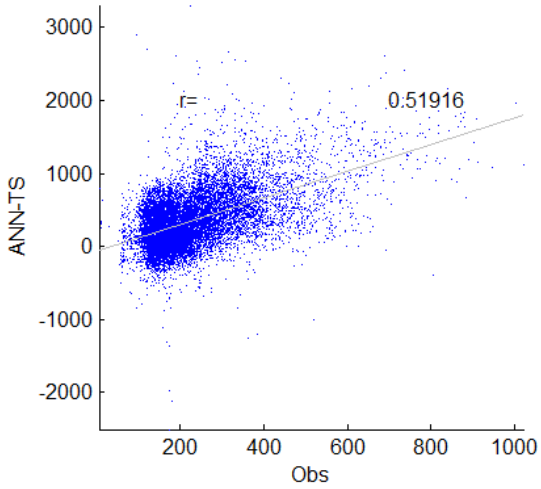

JER
Observed
TS-nd
EC
Data Points
5000
4000
3000
2000
1000
0
-1000
-2000
-3000
0
2000
4000
6000
8000
10000
12000


r= 0.85615
ANN-TS
Obs
5000
4000
3000
2000
1000
0
-1000
-2000
-3000
1000
2000
3000
4000


TSL
Observed
TS-nd
EC
Data Points
3000
2000
1000
0
-1000
-2000
-3000
0
2000
4000
6000
8000
10000
12000

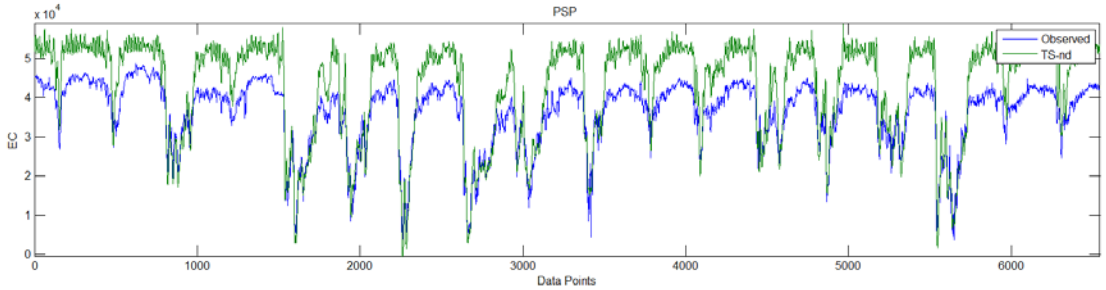

r= 0.76688
ANN-TS
Obs
3000
2000
1000
0
-1000
-2000
-3000
1000
2000
3000

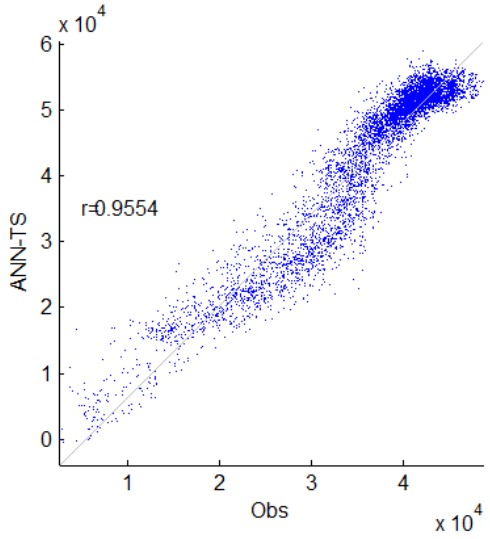

SAL
Observed
TS-nd
EC
Data Points
3000
2000
1000
0
-1000
-2000
0
2000
4000
6000
8000
10000
12000

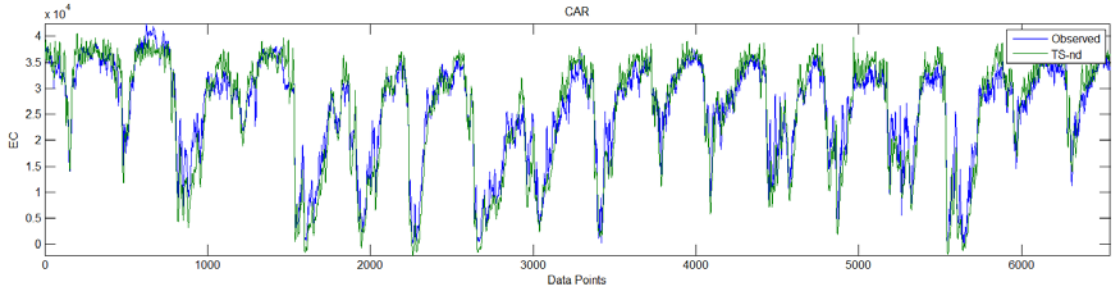

r= 0.51916
ANN-TS
Obs
3000
2000
1000
0
-1000
-2000
200
400
600
800
1000

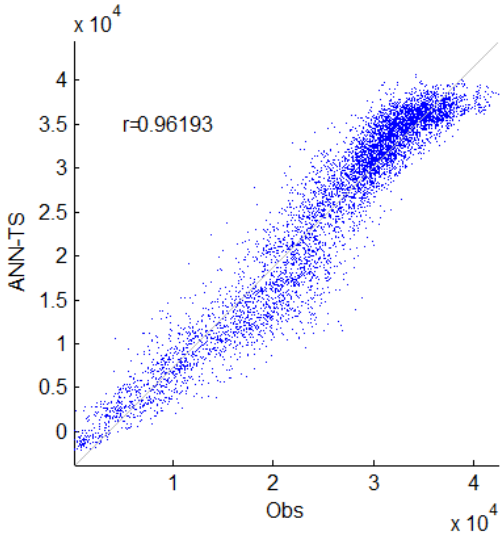
## MODEL 6

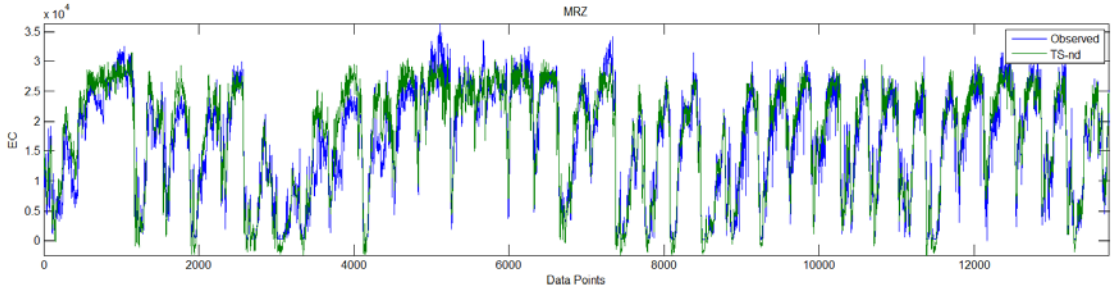
### *1 Tide*

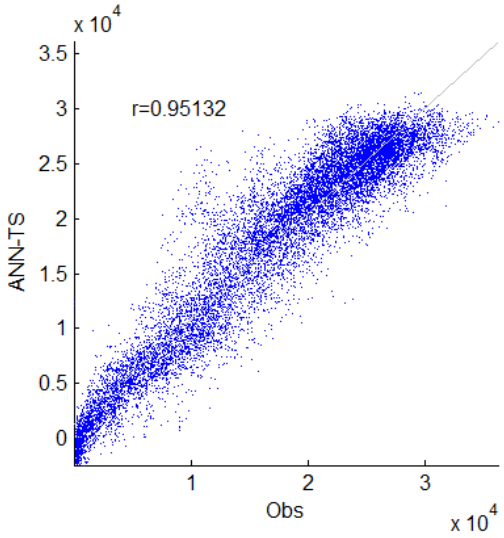


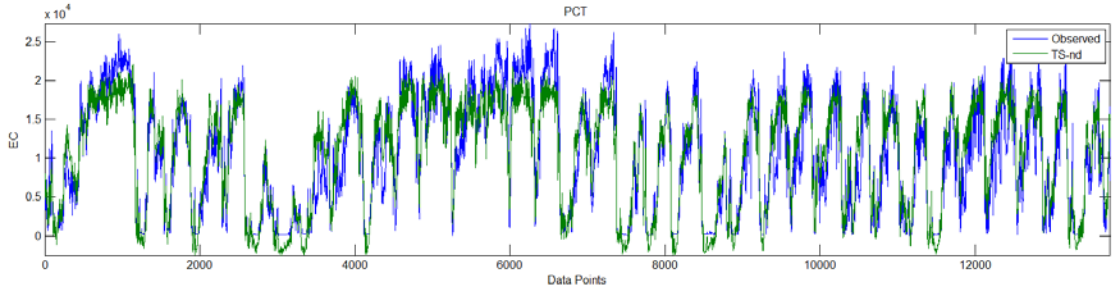



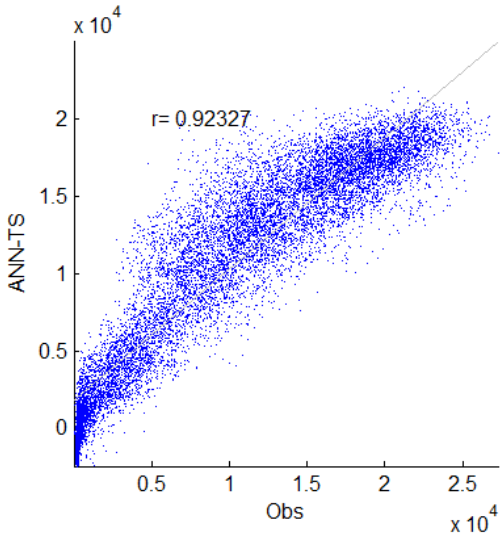



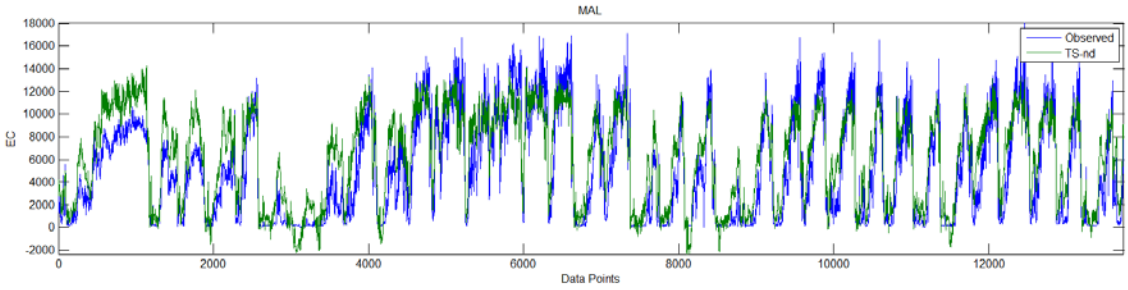

x 10^4
r=0.96193
ANN-TS
Obs
x 10^4

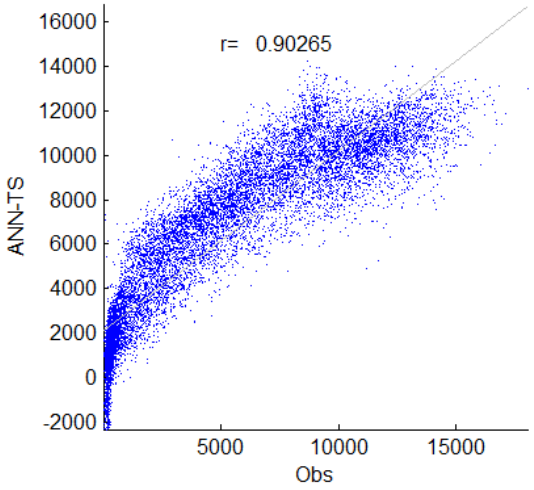

MRZ
x 10^4
EC
Data Points
Observed
TS-nd

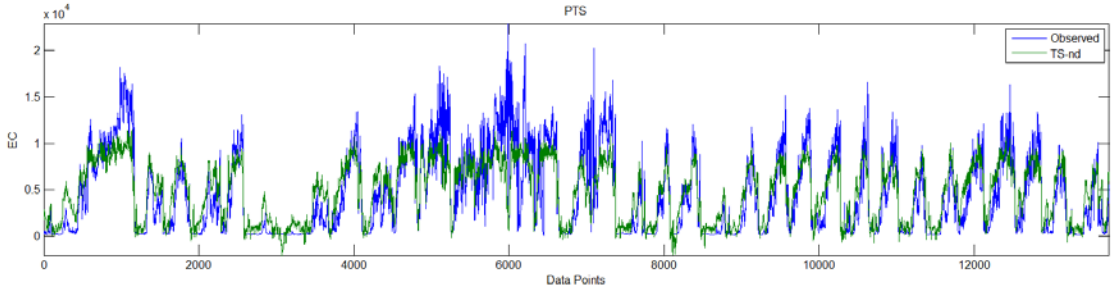

x 10^4
r=0.95132
ANN-TS
Obs
x 10^4

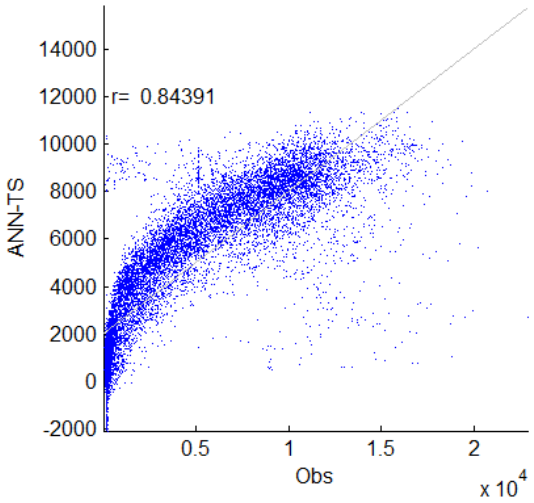

PCT
x 10^4
EC
Data Points
Observed
TS-nd

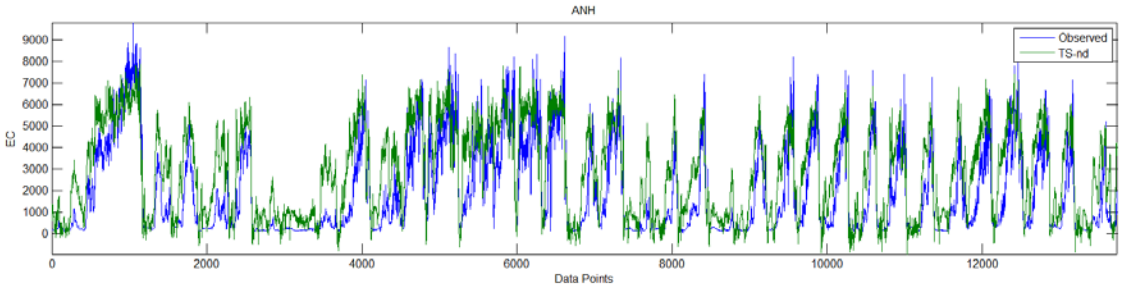

x 10^4
r= 0.92327
ANN-TS
Obs
x 10^4

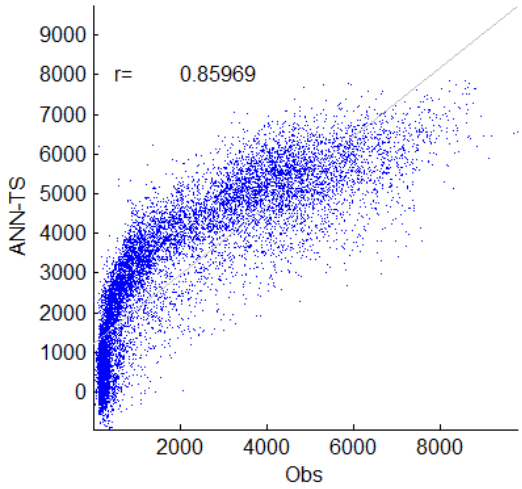

MAL
EC
Data Points
Observed
TS-nd

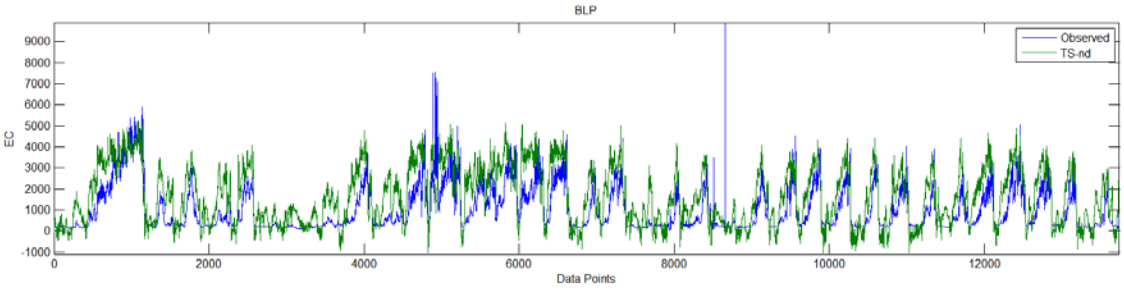

r= 0.90265
ANN-TS
Obs
16000
14000
12000
10000
8000
6000
4000
2000
0
-2000
5000
10000
15000

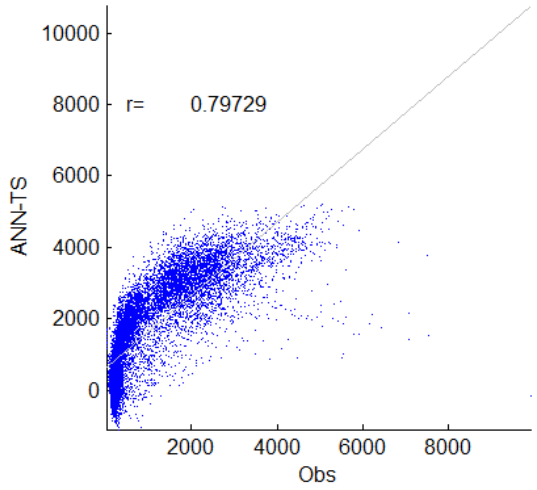

PTS
x 10^4
EC
Data Points
Observed
TS-nd
2
1.5
1
0.5
0
0
2000
4000
6000
8000
10000
12000

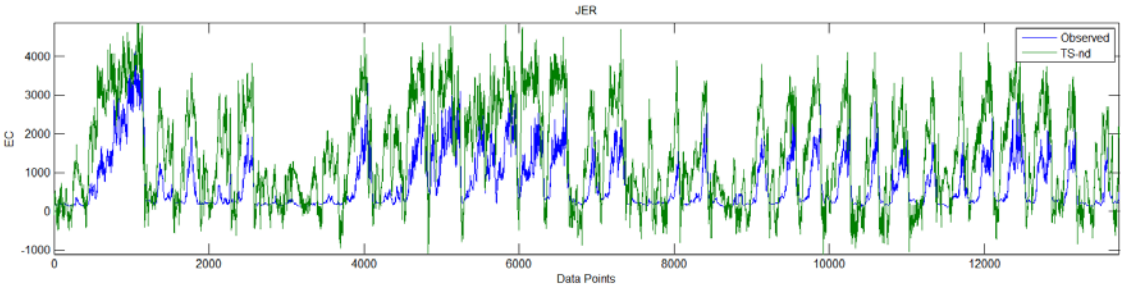

r= 0.84391
ANN-TS
Obs
x 10^4
14000
12000
10000
8000
6000
4000
2000
0
-2000
0.5
1
1.5
2

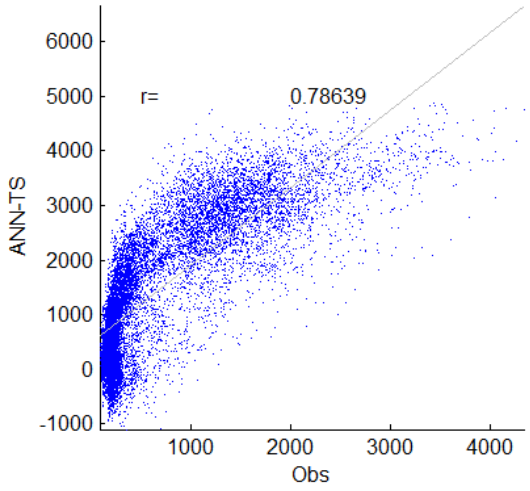

ANH
Observed
TS-nd
EC
Data Points

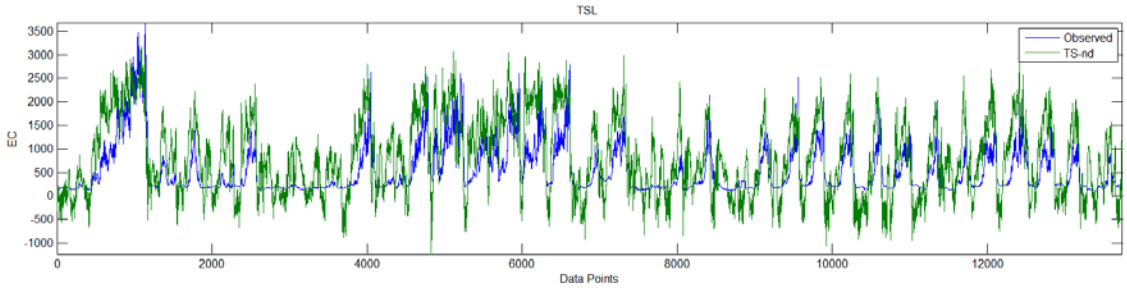

r= 0.85969
ANN-TS
Obs

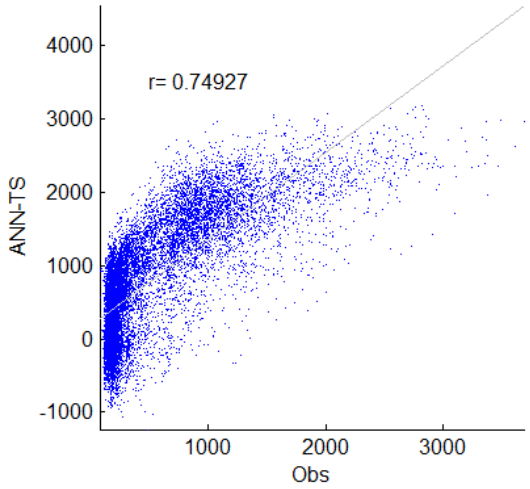

BLP
Observed
TS-nd
EC
Data Points

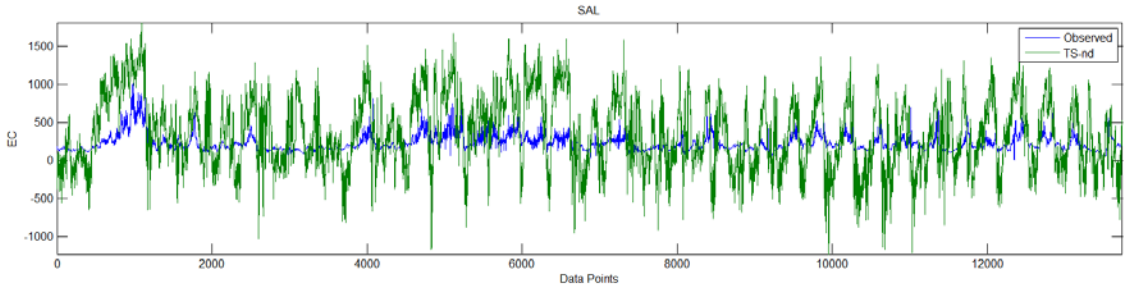

r= 0.79729
ANN-TS
Obs
10000
8000
6000
4000
2000
0
2000
4000
6000
8000

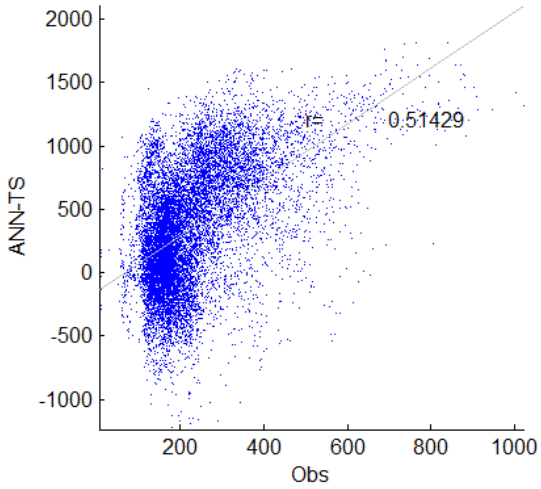

JER
Observed
TS-nd
EC
Data Points
4000
3000
2000
1000
0
-1000
0
2000
4000
6000
8000
10000
12000


r= 0.78639
ANN-TS
Obs
6000
5000
4000
3000
2000
1000
0
-1000
1000
2000
3000
4000

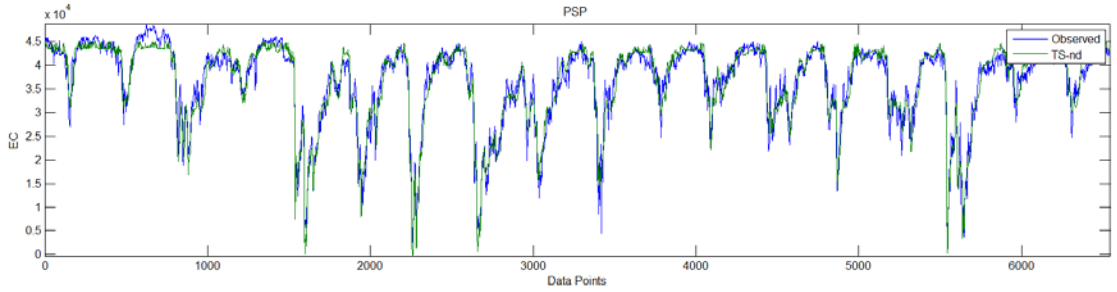

TSL
Observed
TS-nd
EC
Data Points
3500
3000
2500
2000
1500
1000
500
0
-500
-1000
0
2000
4000
6000
8000
10000
12000

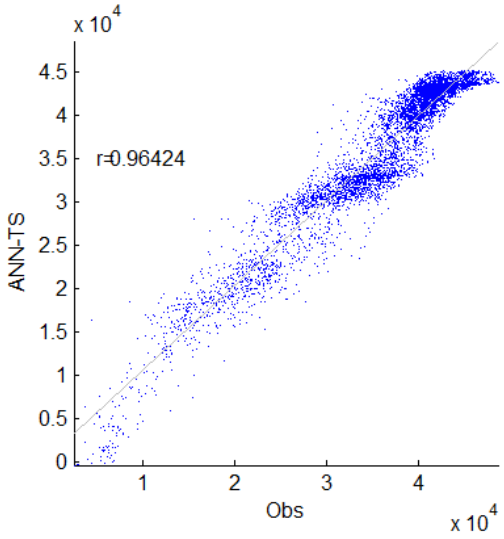

r= 0.74927
ANN-TS
Obs
4000
3000
2000
1000
0
-1000
1000
2000
3000

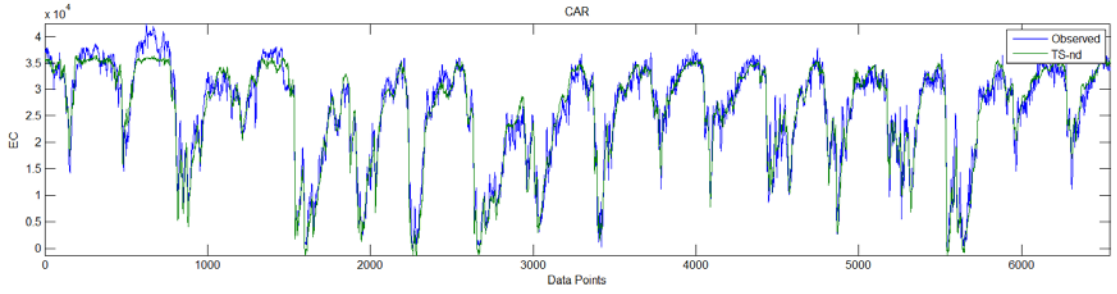

SAL
Observed
TS-nd
EC
Data Points
1500
1000
500
0
-500
-1000
0
2000
4000
6000
8000
10000
12000

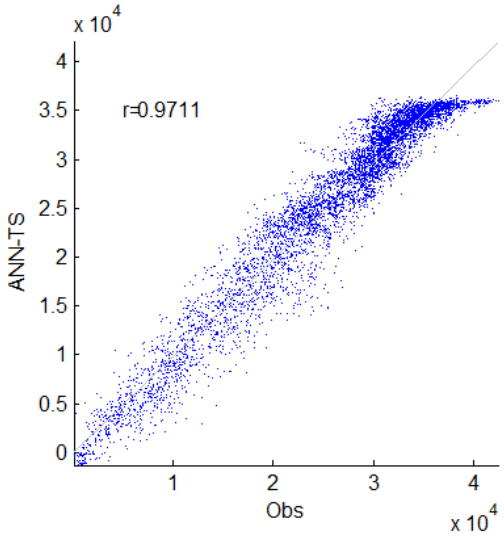

ANN-TS
Obs
r=
0.51429
2000
1500
1000
500
0
-500
-1000
200
400
600
800
1000

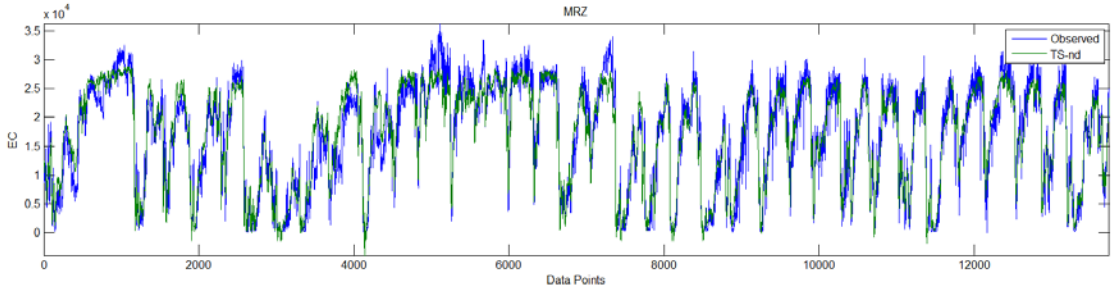
## MODEL 7
### *No Tide*

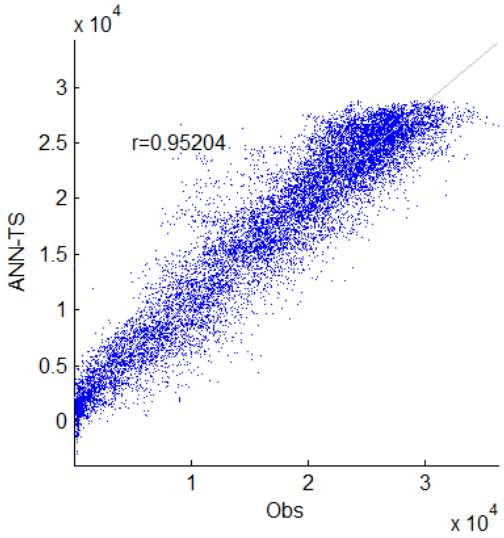


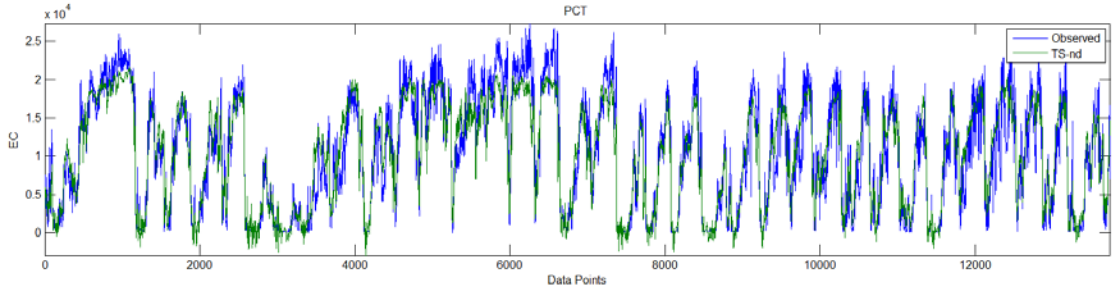



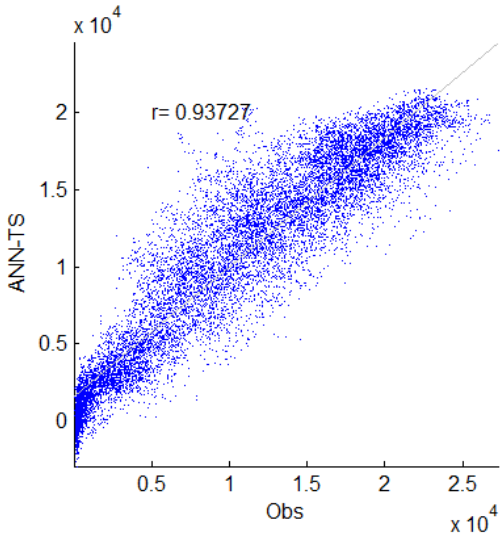



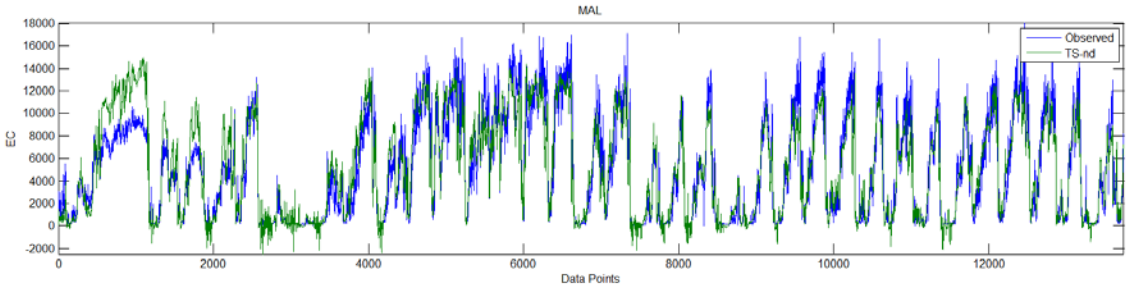

x 10^4
r=0.9711
ANN-TS
Obs
x 10^4

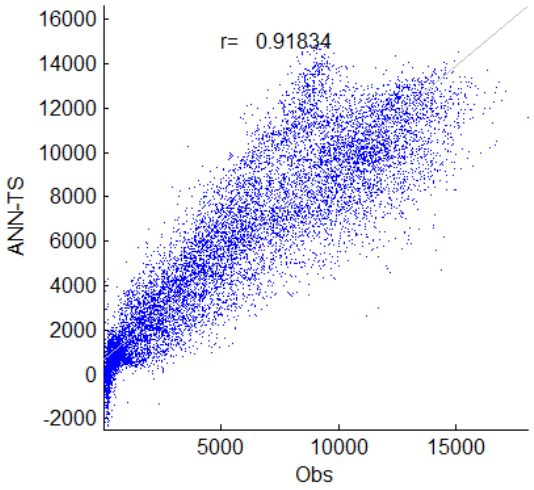

MRZ
Observed
TS-nd
EC
Data Points

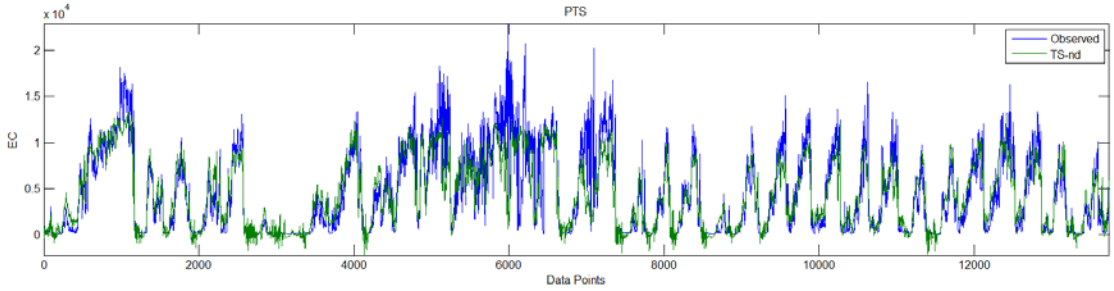

x 10^4
r=0.95204
ANN-TS
Obs
x 10^4

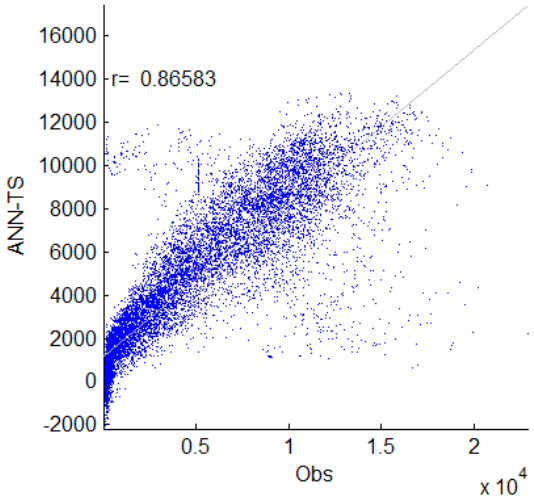

PCT
x 10^4
EC
Data Points
Observed
TS-nd

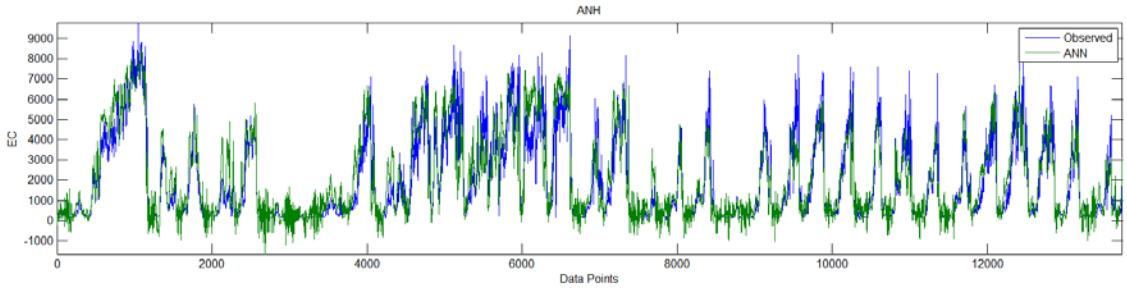

x 10^4
r= 0.93727
ANN-TS
Obs
x 10^4

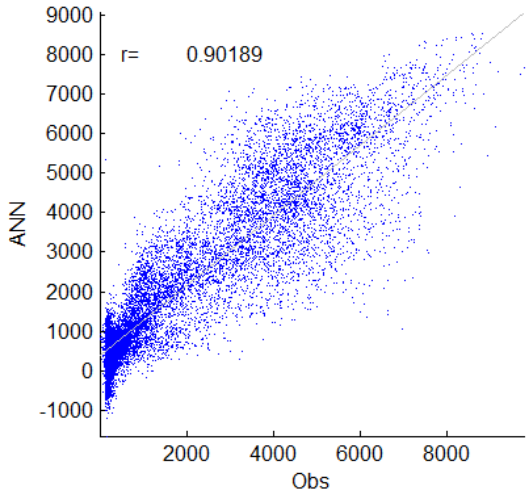

MAL
EC
Data Points
Observed
TS-nd

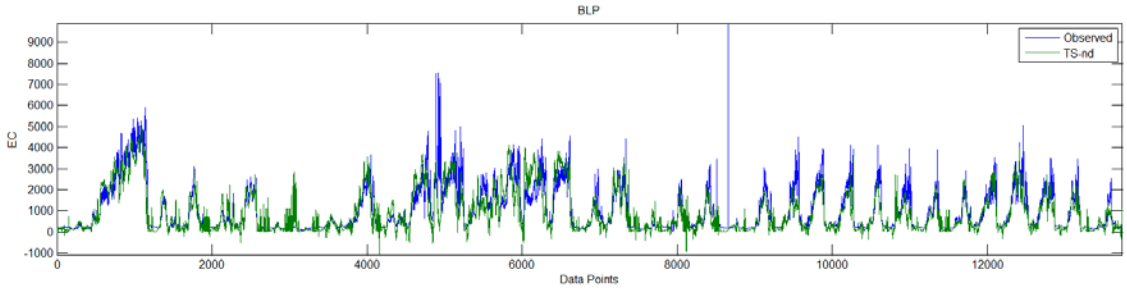

r= 0.91834
ANN-TS
Obs
16000
14000
12000
10000
8000
6000
4000
2000
0
-2000
5000
10000
15000

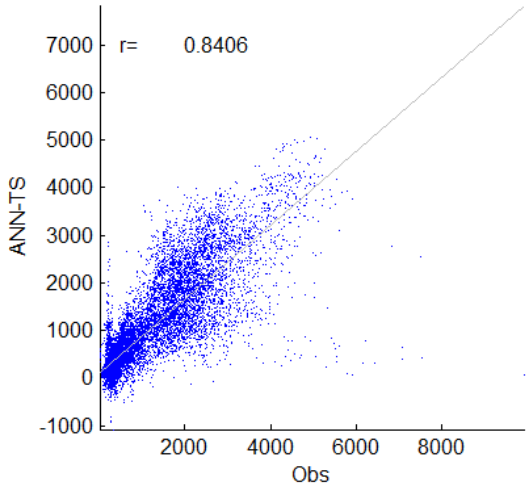

PTS
x 10^4
EC
Data Points
Observed
TS-nd
2
1.5
1
0.5
0
2000
4000
6000
8000
10000
12000

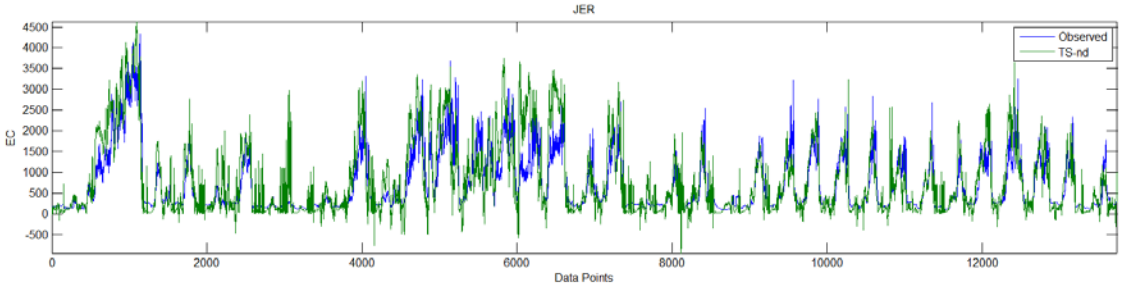

r= 0.86583
ANN-TS
Obs
x 10^4
16000
14000
12000
10000
8000
6000
4000
2000
0
-2000
0.5
1
1.5
2

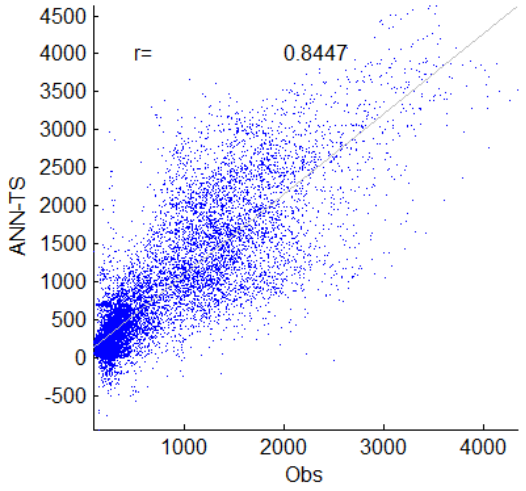

ANH
Observed
ANN
EC
Data Points

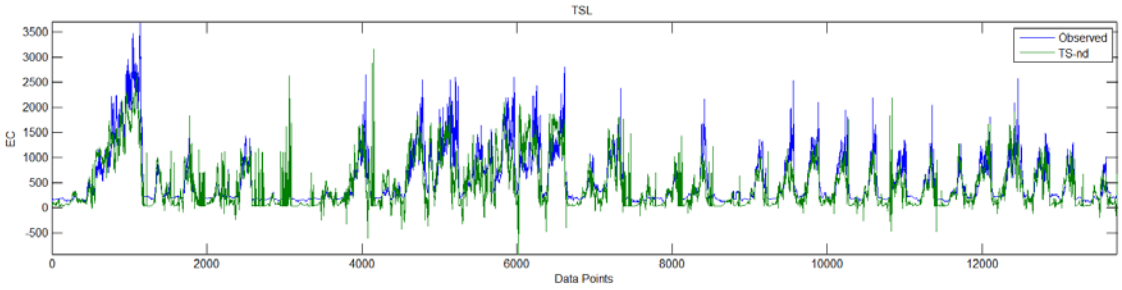

r= 0.90189
ANN
Obs

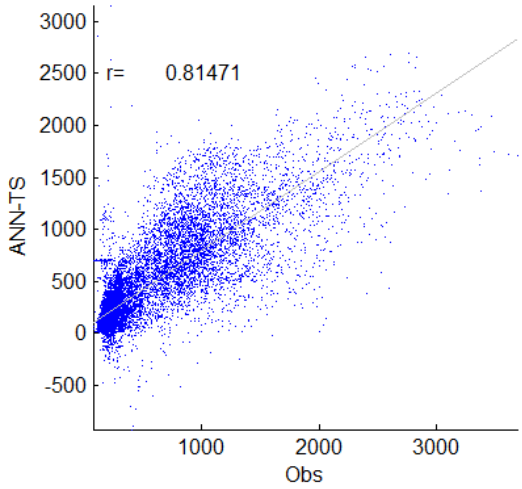

BLP
Observed
TS-nd
EC
Data Points

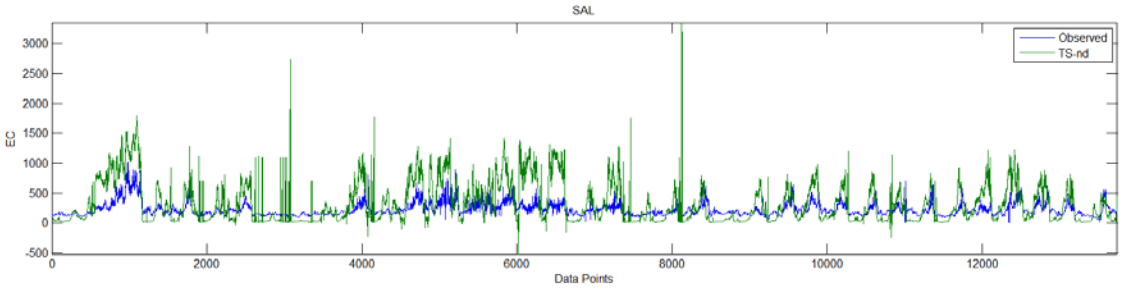

r= 0.8406
ANN-TS
Obs
7000
6000
5000
4000
3000
2000
1000
0
-1000
2000
4000
6000
8000

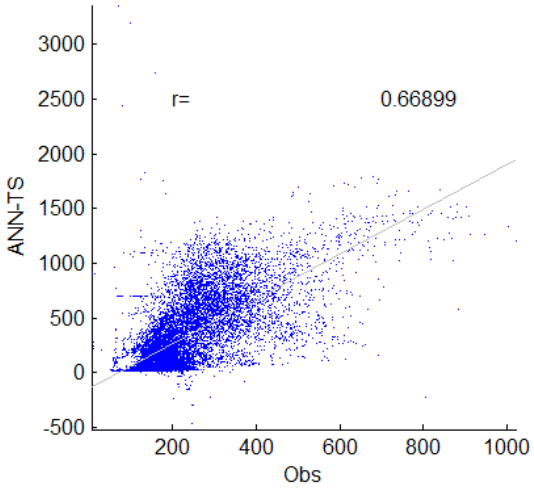

JER
Observed
TS-nd
EC
Data Points
4500
4000
3500
3000
2500
2000
1500
1000
500
0
-500
0
2000
4000
6000
8000
10000
12000


r= 0.8447
ANN-TS
Obs
4500
4000
3500
3000
2500
2000
1500
1000
500
0
-500
1000
2000
3000
4000


TSL
Observed
TS-nd
EC
Data Points
3500
3000
2500
2000
1500
1000
500
0
-500
0
2000
4000
6000
8000
10000
12000

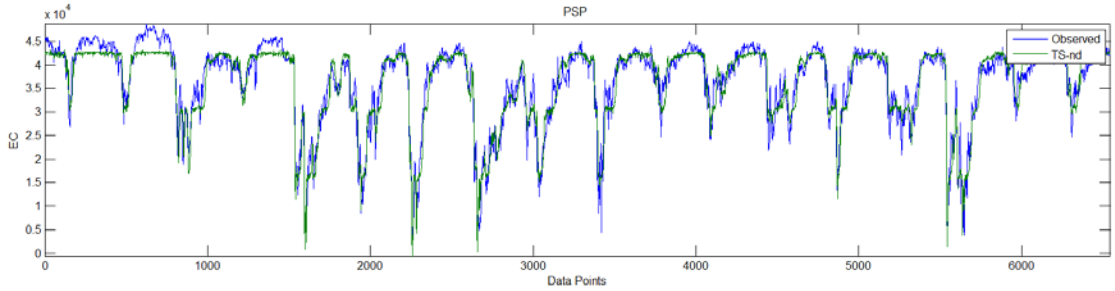

r= 0.81471
ANN-TS
Obs
3000
2500
2000
1500
1000
500
0
-500
1000
2000
3000

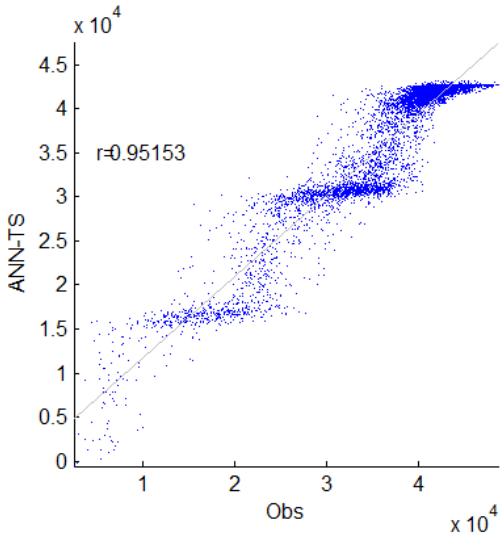

SAL
Observed
TS-nd
EC
Data Points
3000
2500
2000
1500
1000
500
0
-500
0
2000
4000
6000
8000
10000
12000

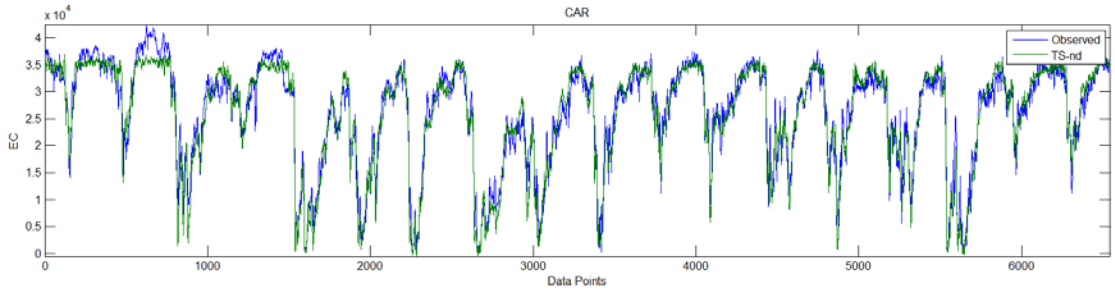

r=
0.66899
ANN-TS
Obs
3000
2500
2000
1500
1000
500
0
-500
200
400
600
800
1000

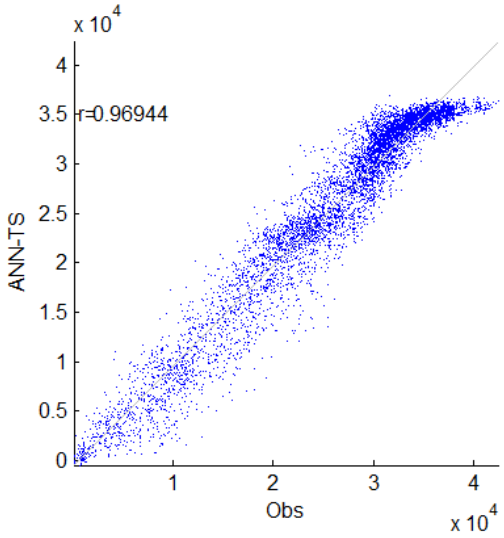
## MODEL 8

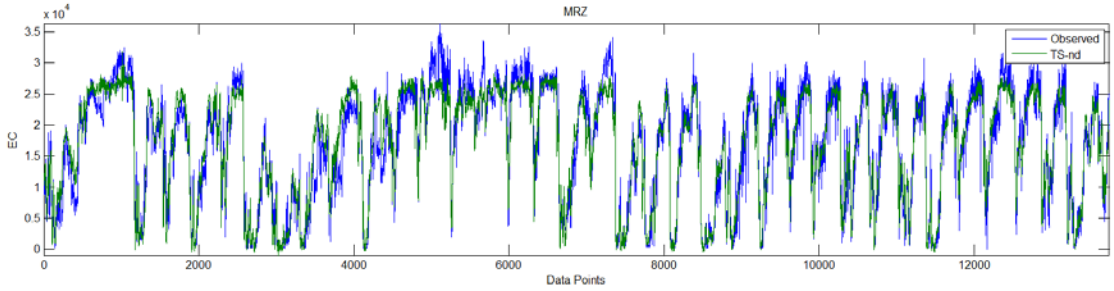
### *Actual Tide at Golden Gate (MSL)*

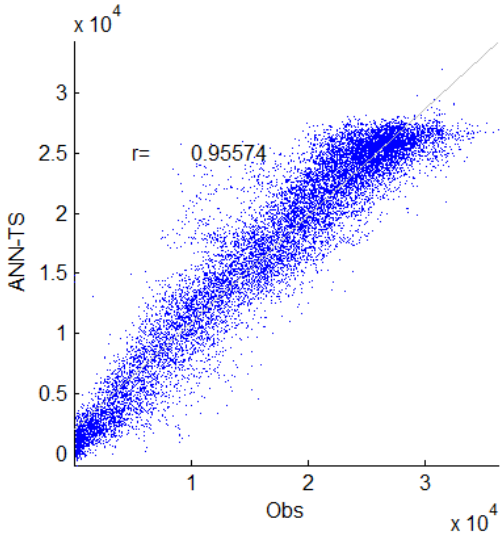


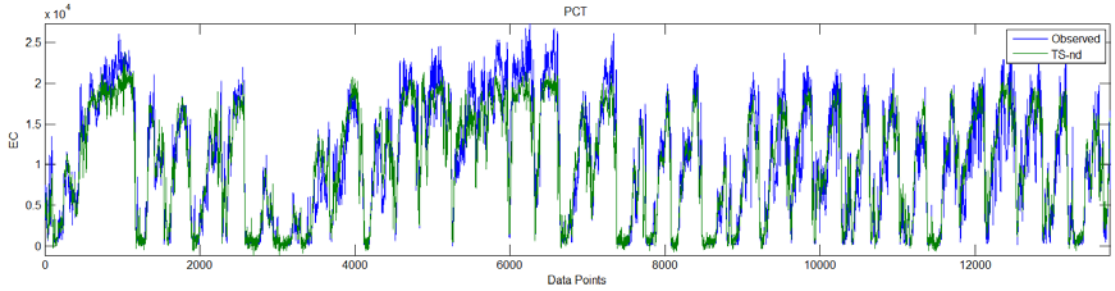



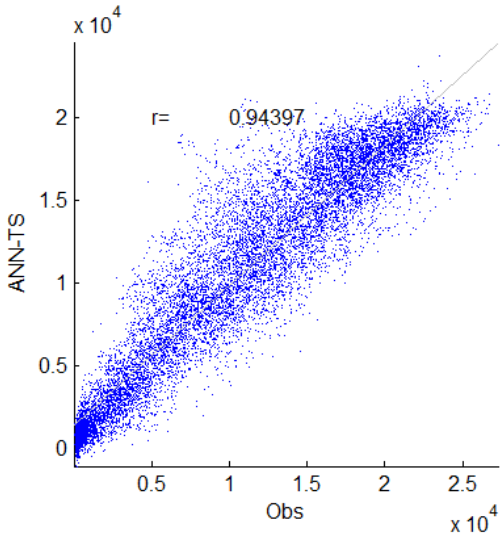



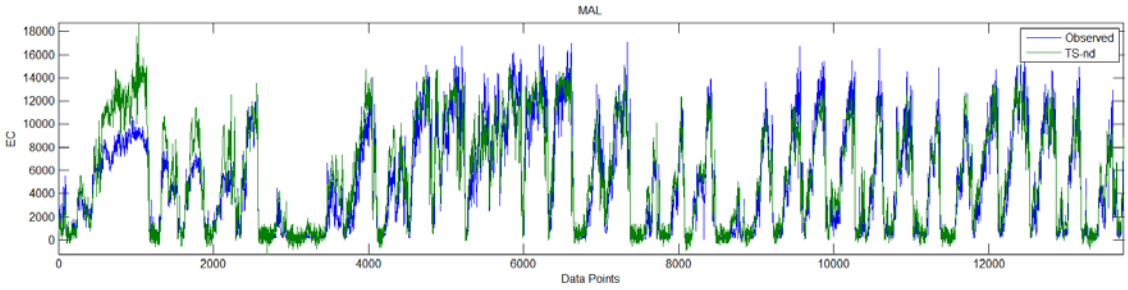

x 10^4
r=0.96944
ANN-TS
Obs
x 10^4

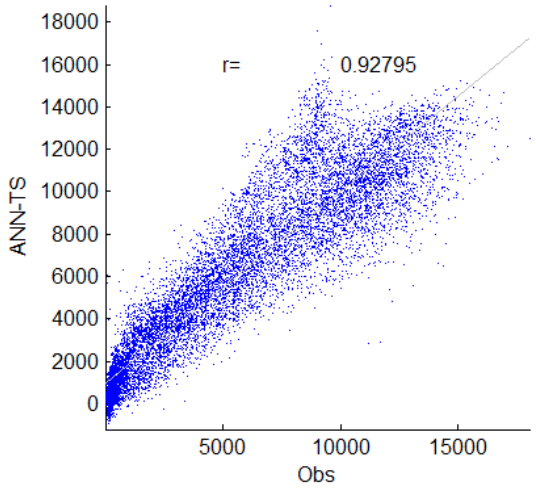

MRZ
Observed
TS-nd
EC
Data Points

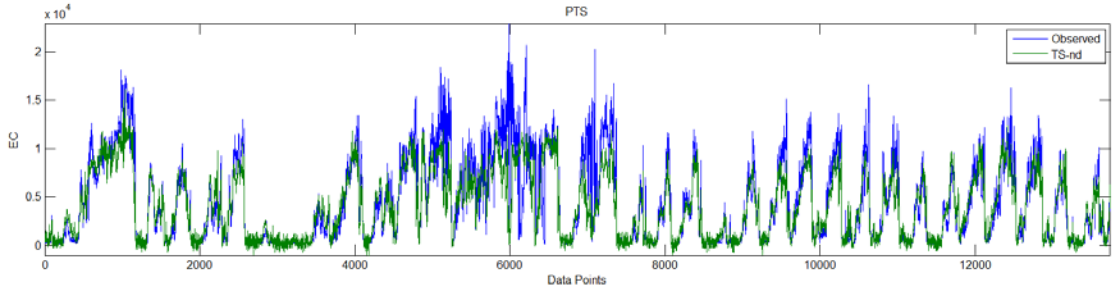

x 10^4
r= 0.95574
ANN-TS
Obs
x 10^4

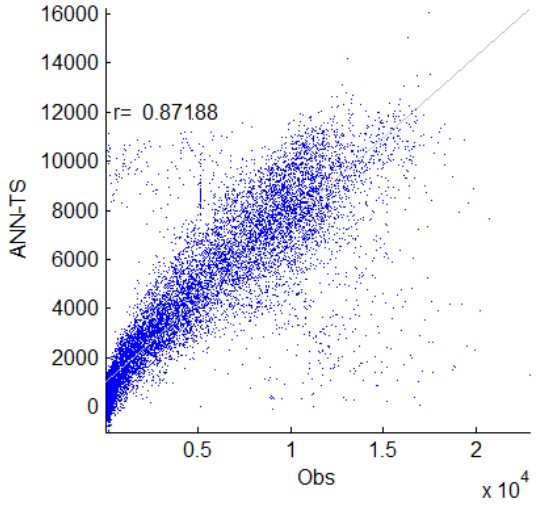

PCT
x 10^4
EC
Data Points
Observed
TS-nd

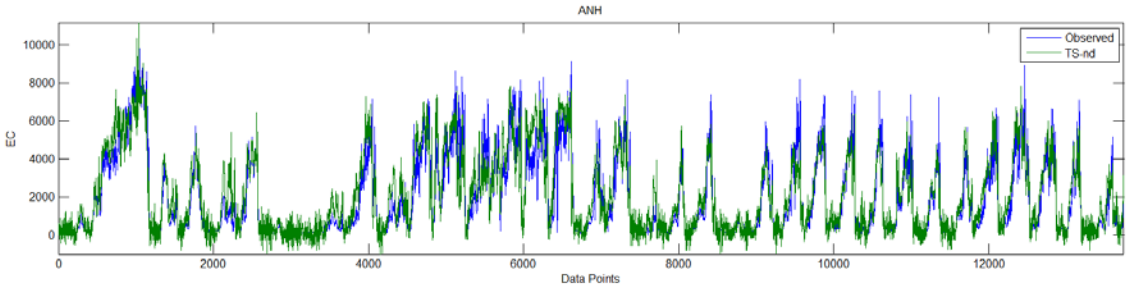

x 10^4
r= 0.94397
ANN-TS
Obs
x 10^4

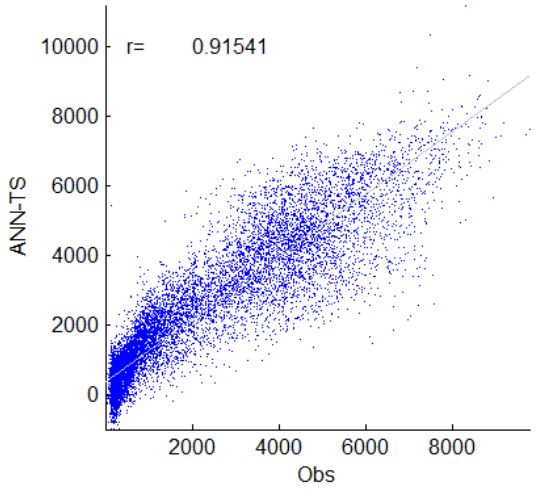

MAL
EC
Data Points
Observed
TS-nd

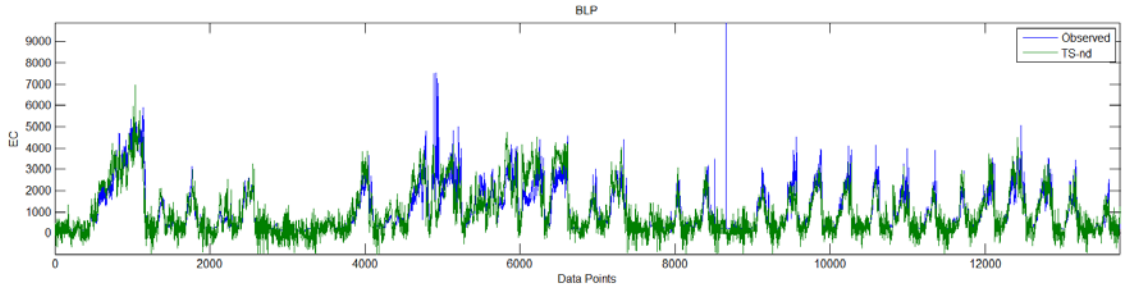

r= 0.92795
ANN-TS
Obs
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
5000
10000
15000

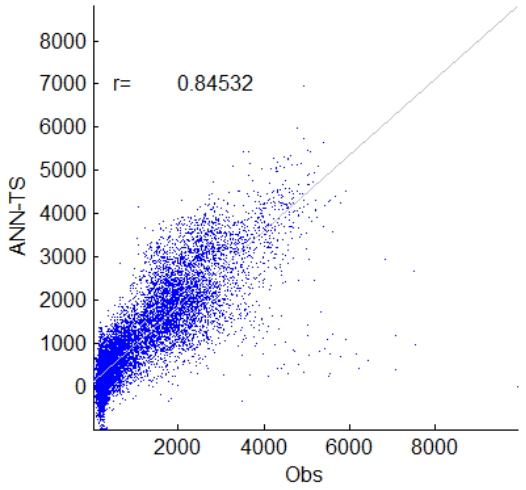

PTS
x 10^4
EC
Data Points
Observed
TS-nd
2
1.5
1
0.5
0
2000
4000
6000
8000
10000
12000


r= 0.87188
ANN-TS
Obs
x 10^4
16000
14000
12000
10000
8000
6000
4000
2000
0
0.5
1
1.5
2


ANH
Observed
TS-nd
EC
Data Points
0
2000
4000
6000
8000
10000
12000


r= 0.91541
ANN-TS
Obs
0
2000
4000
6000
8000
10000


BLP
Observed
TS-nd
EC
Data Points
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
12000


r= 0.84532
ANN-TS
Obs
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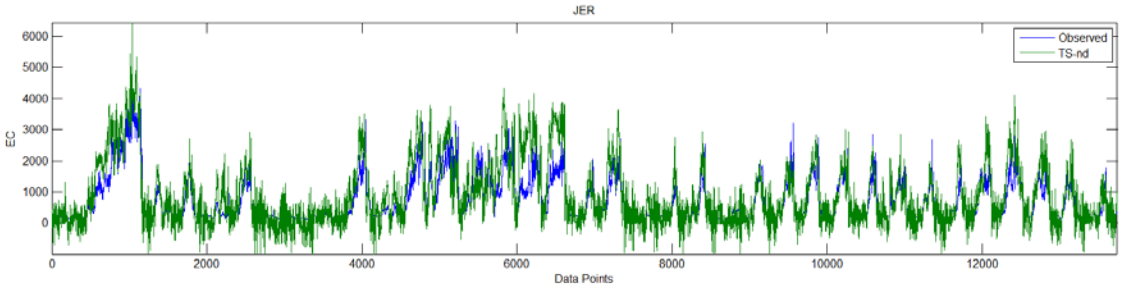
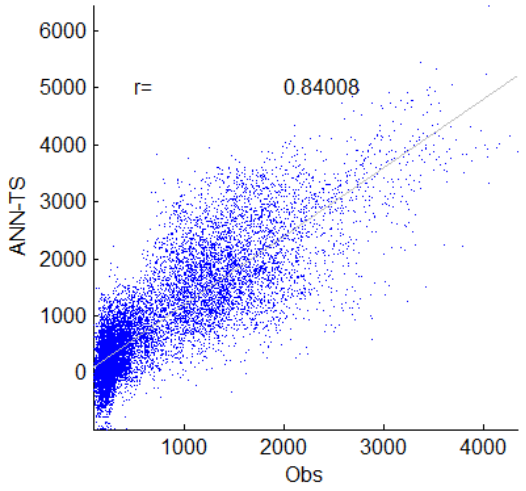
7000
6000
5000
4000
3000
2000
1000
0
2000
4000
6000
8000


JER
Observed
TS-nd
EC
Data Points
6000
5000
4000
3000
2000
1000
0
0
2000
4000
6000
8000
10000
12000


r= 0.84008
ANN-TS
Obs
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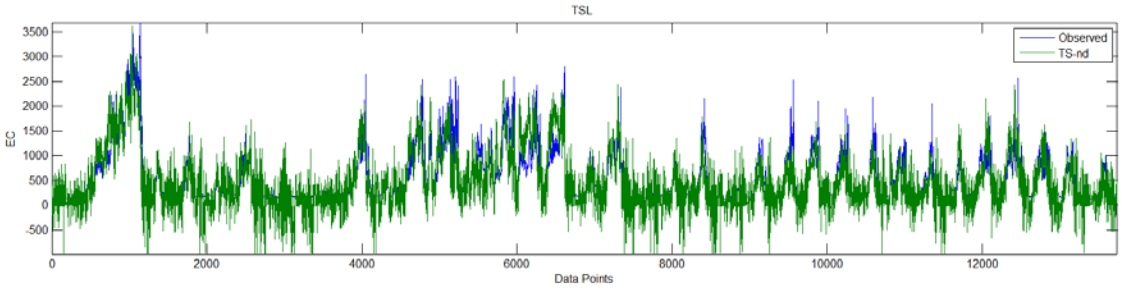
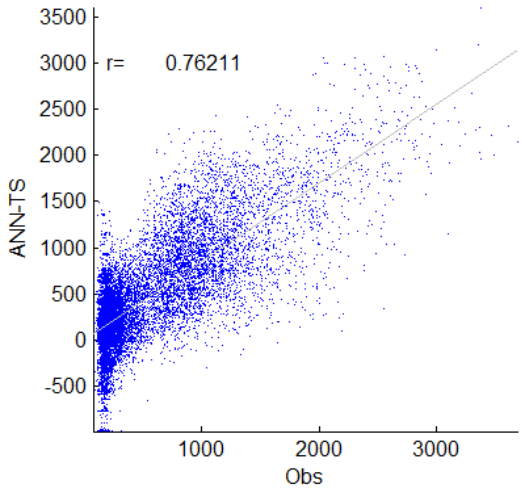
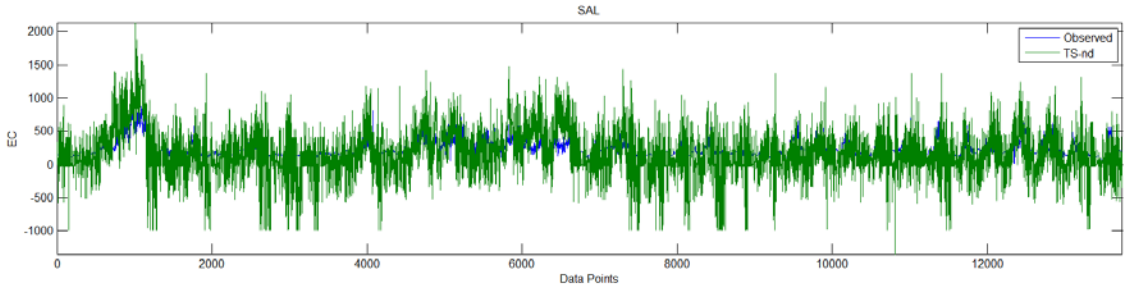
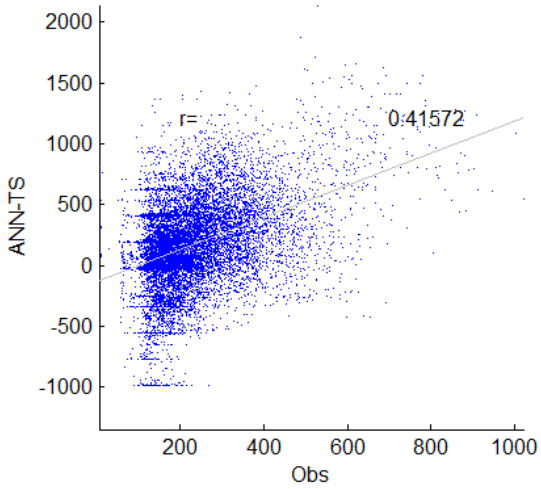
5000
4000
3000
2000
1000
0
1000
2000
3000
4000


TSL
Observed
TS-nd
EC
Data Points
3500
3000
2500
2000
1500
1000
500
0
-500
0
2000
4000
6000
8000
10000
12000

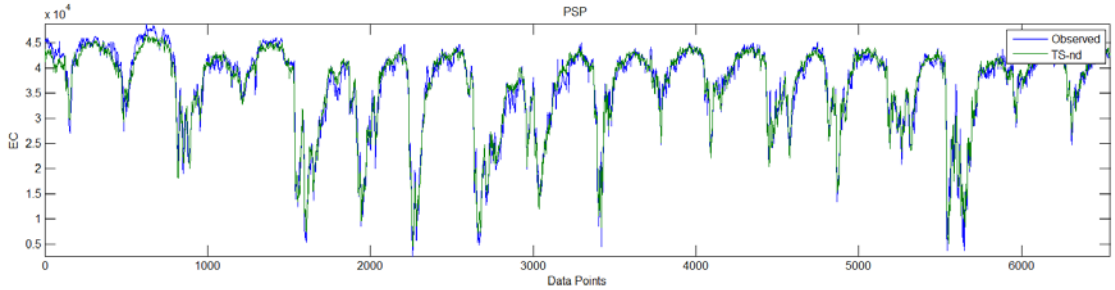

r= 0.76211
ANN-TS
Obs
3500
3000
2500
2000
1500
1000
500
0
-500
1000
2000
3000

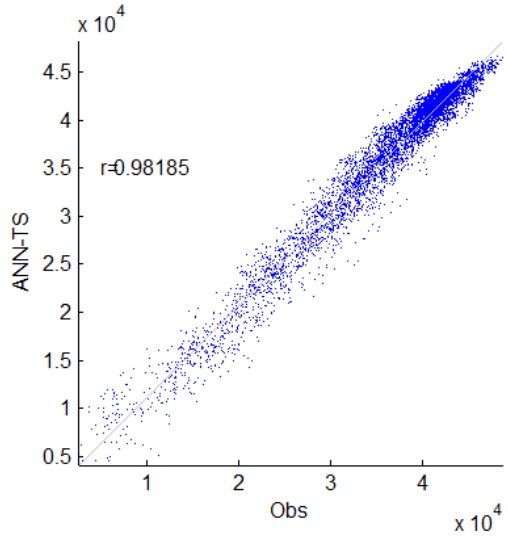

SAL
Observed
TS-nd
EC
Data Points
2000
1500
1000
500
0
-500
-1000
0
2000
4000
6000
8000
10000
12000

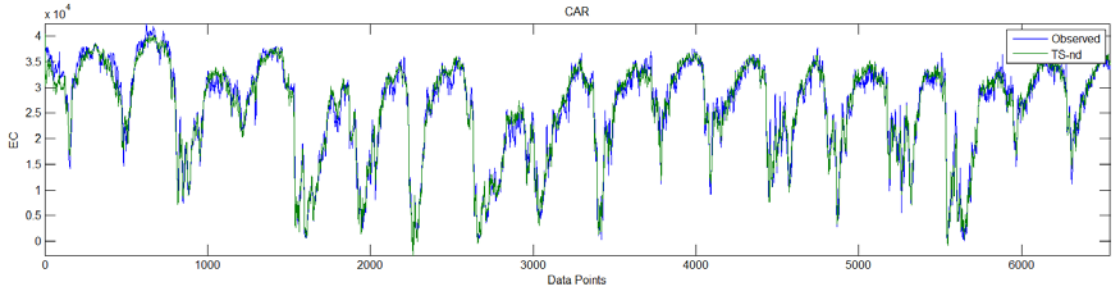

r= 0.41572
ANN-TS
Obs
2000
1500
1000
500
0
-500
-1000
200
400
600
800
1000

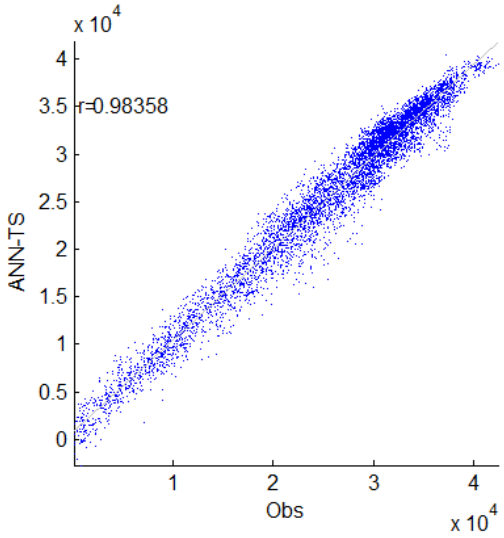
## MODEL 9

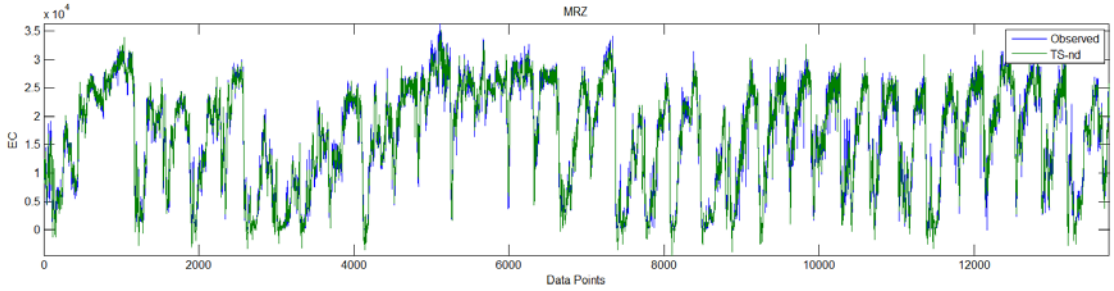
### *30-Day Antecedent Salinity*

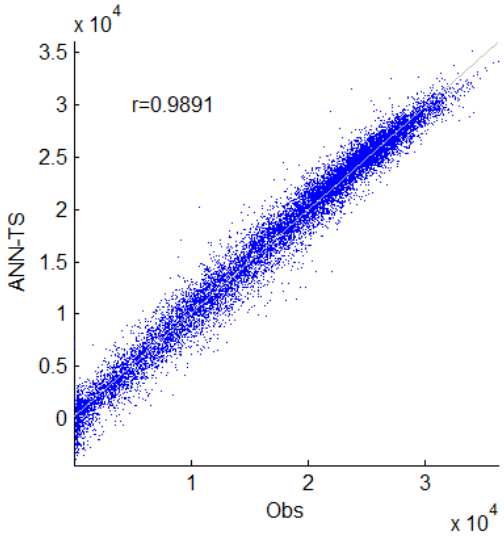


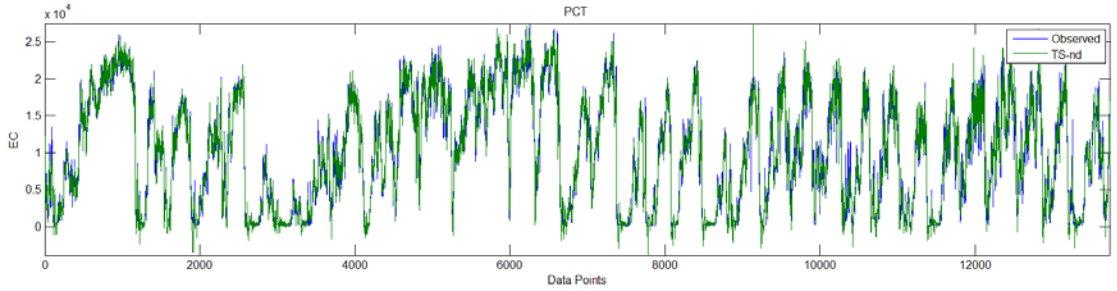



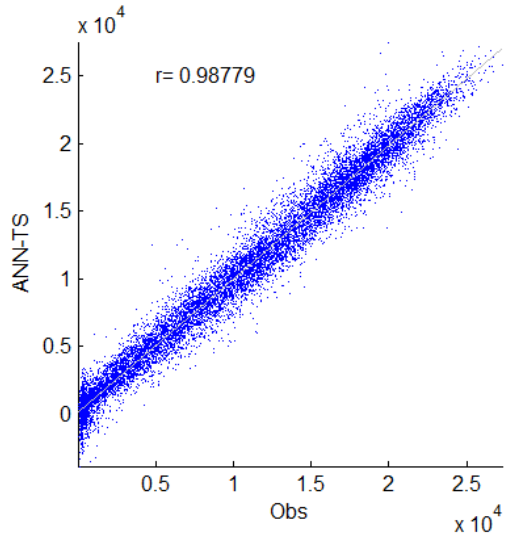



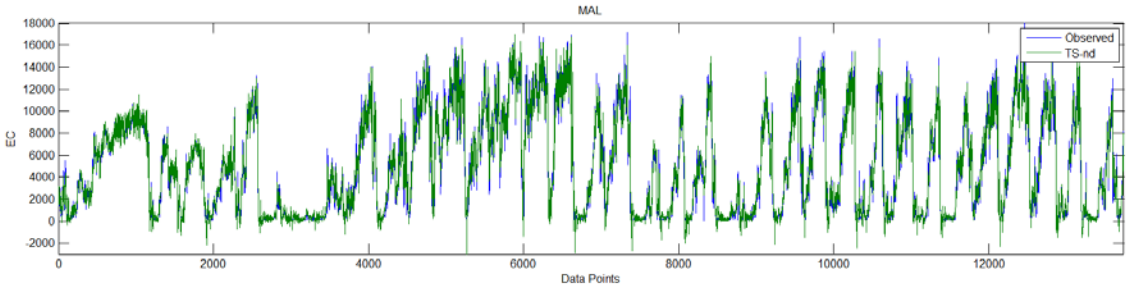

x 10^4
r=0.98358
ANN-TS
Obs
x 10^4

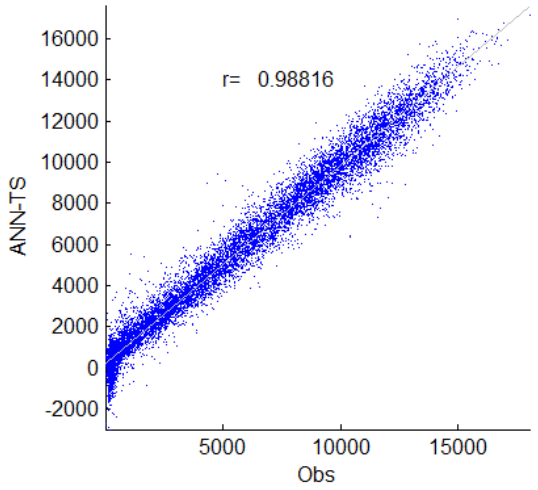

MRZ
Observed
TS-nd
EC
Data Points


x 10^4
r=0.9891
ANN-TS
Obs
x 10^4


PCT
x 10^4
EC
Data Points
Observed
TS-nd


x 10^4
r= 0.98779
ANN-TS
Obs
x 10^4


MAL
EC
Data Points
Observed
TS-nd


r= 0.98816
ANN-TS
Obs
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10000
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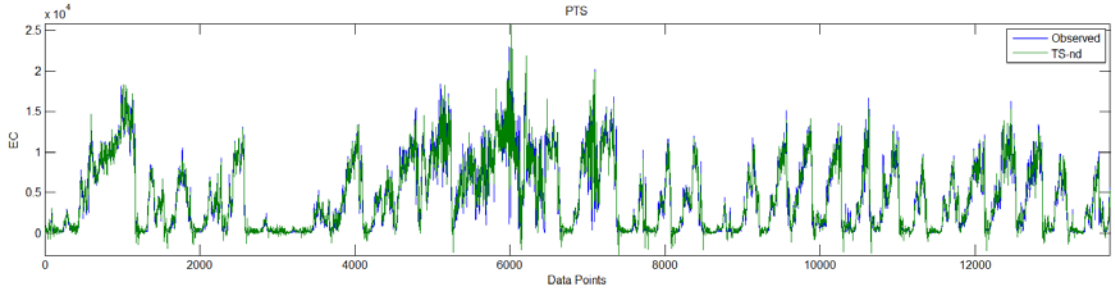
PTS
x 10^4
EC
Data Points
Observed
TS-nd
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1.5
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0.5
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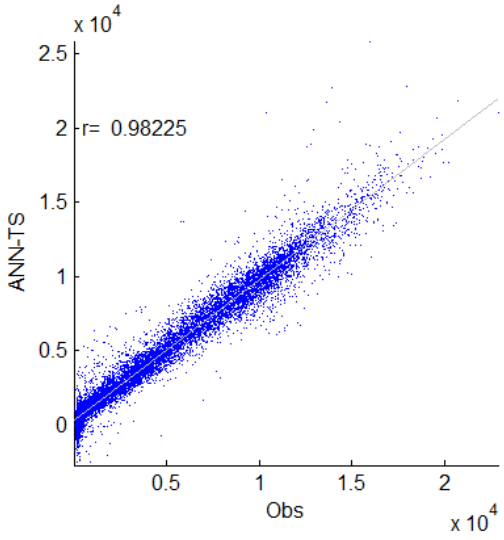
8000
10000
12000


x 10^4
r= 0.98225
ANN-TS
Obs
x 10^4
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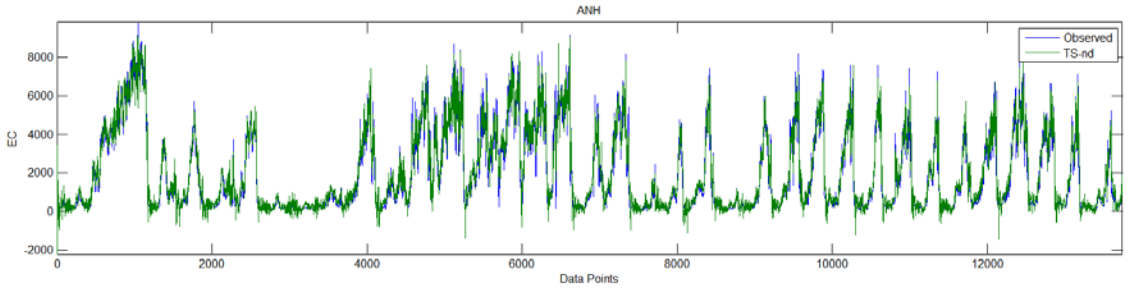
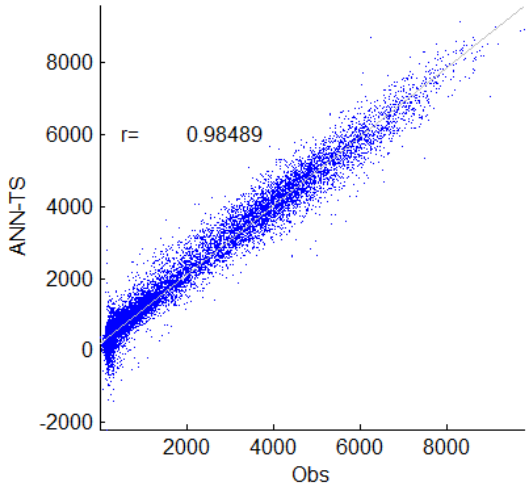
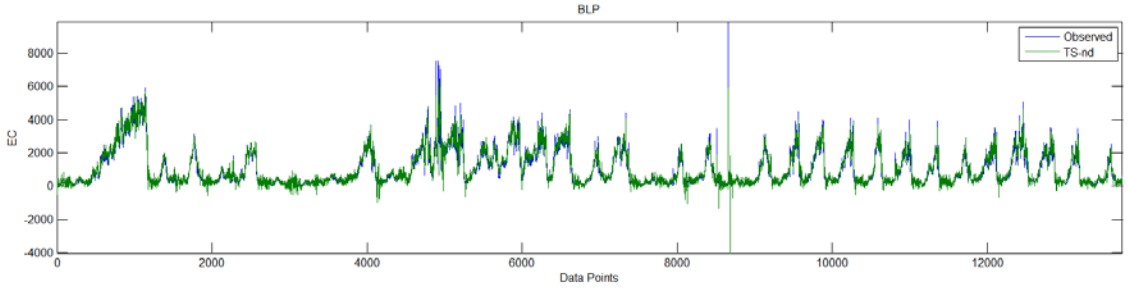
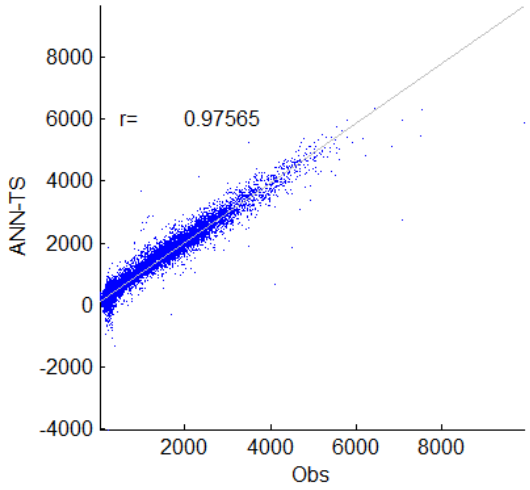
1
1.5
2


ANH
Observed
TS-nd
EC
Data Points


r= 0.98489
ANN-TS
Obs


BLP
Observed
TS-nd
EC
Data Points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Obs
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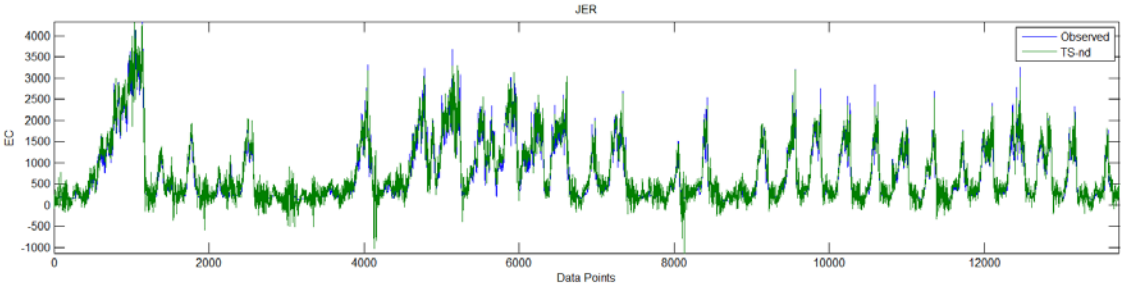
-2000
-4000
2000
4000
6000
8000


JER
Observed
TS-nd
EC
Data Points
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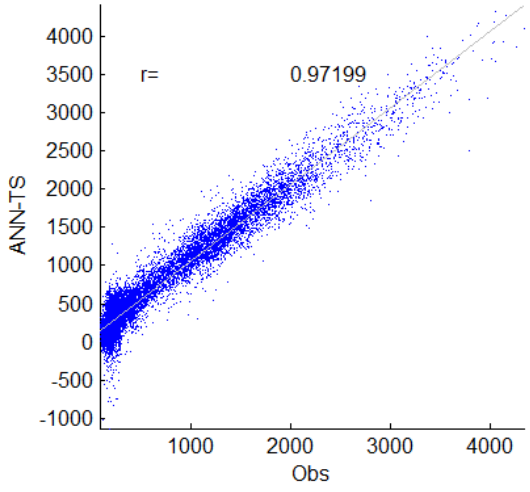
8000
10000
12000


r= 0.97199
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-500
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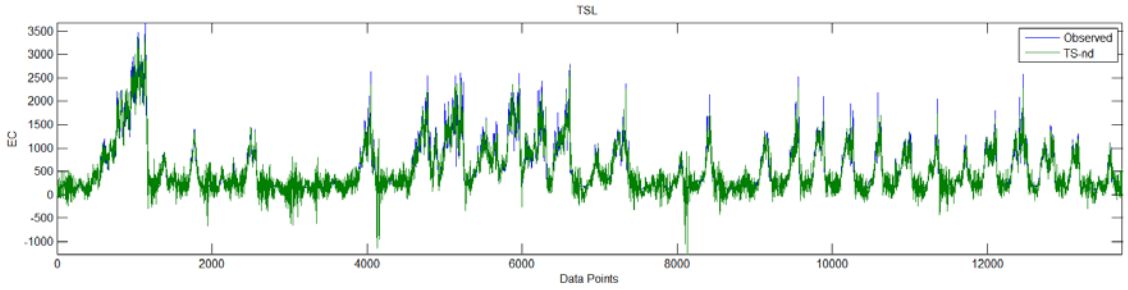
3000
4000


TSL
Observed
TS-nd
EC
Data Points
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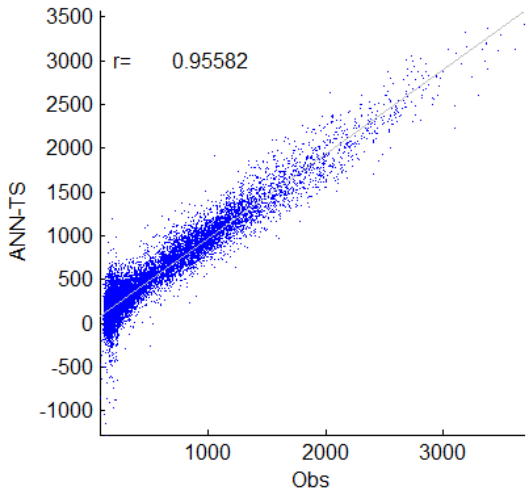
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-1000
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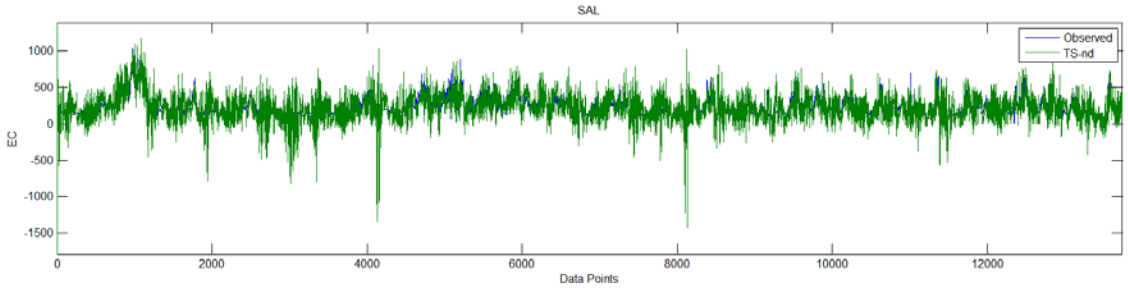
SAL
Observed
TS-nd
EC
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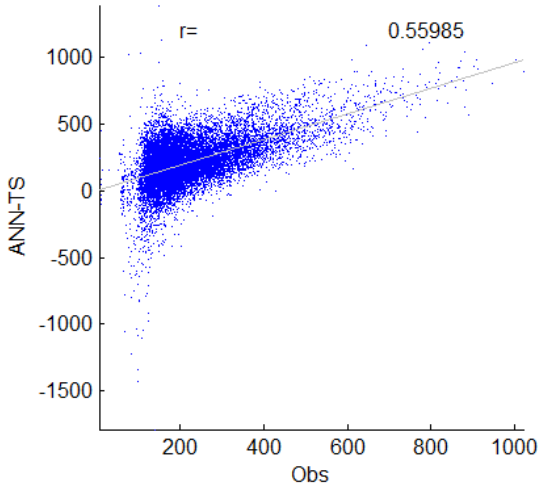
-500
-1000
-1500
0
2000
4000
6000
8000
10000
12000
Data Points


r=
0.55985
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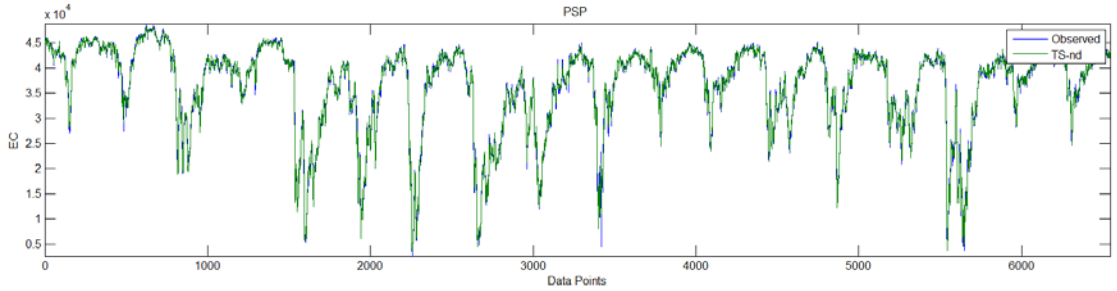
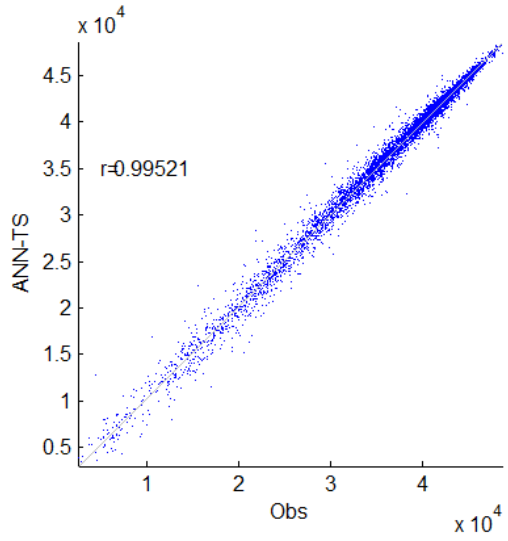
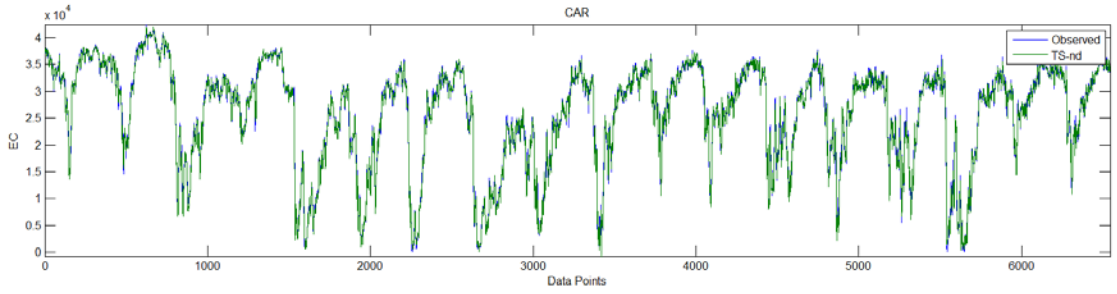
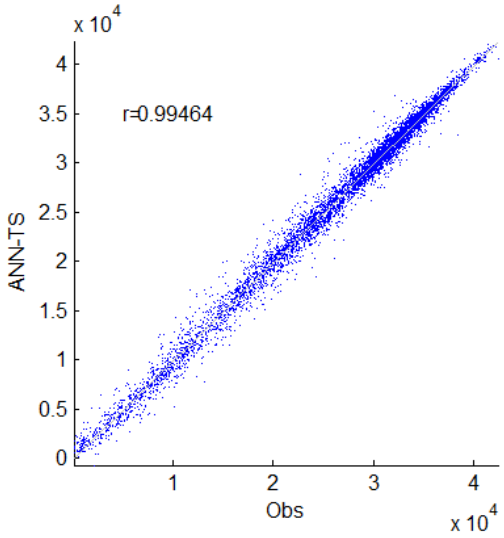
-500
-1000
-1500
ANN-TS
200
400
600
800
1000
Obs

## MODEL 10
## *NARX*

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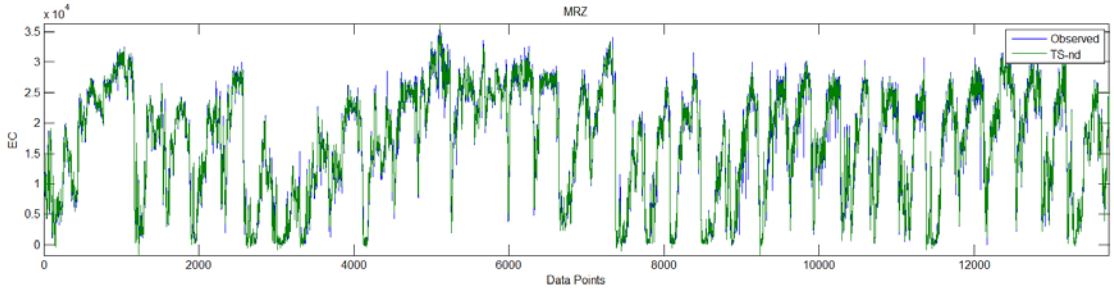
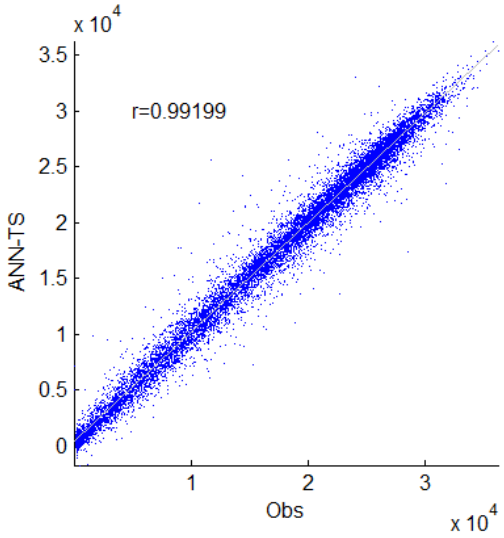
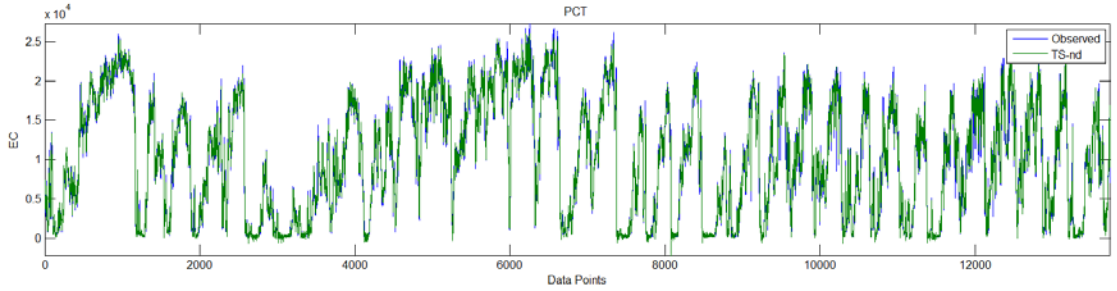
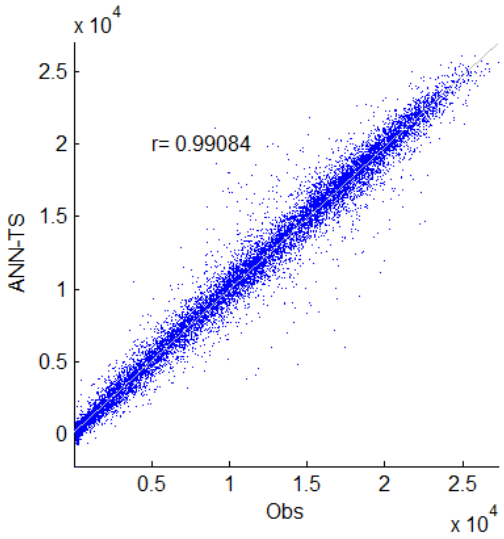
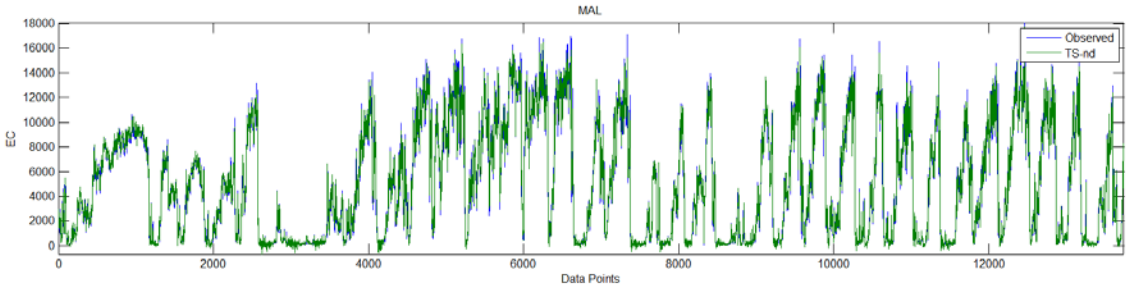
ANN-TS
Obs
x 10^4

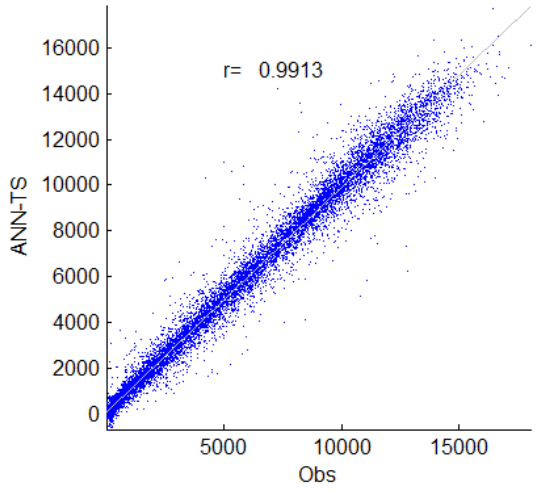

MRZ
Observed
TS-nd
EC
Data Points


x 10^4
r=0.99199
ANN-TS
Obs
x 10^4


PCT
x 10^4
EC
Data Points
Observed
TS-nd


x 10^4
r= 0.99084
ANN-TS
Obs
x 10^4


MAL
EC
Data Points
Observed
TS-nd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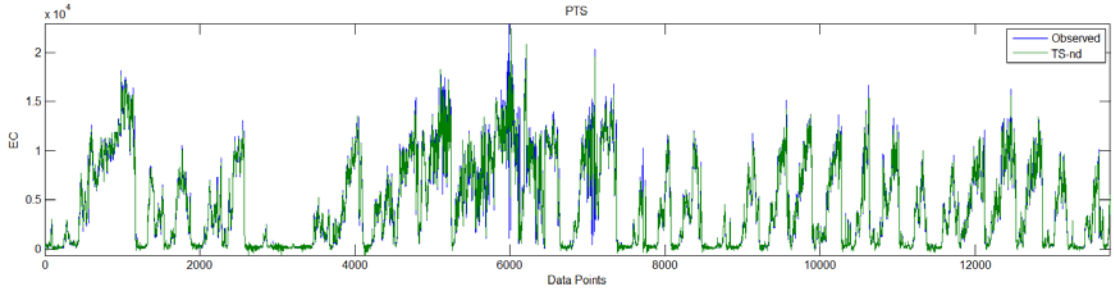
PTS
x 10^4
EC
Data Points
Observed
TS-nd
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0.5
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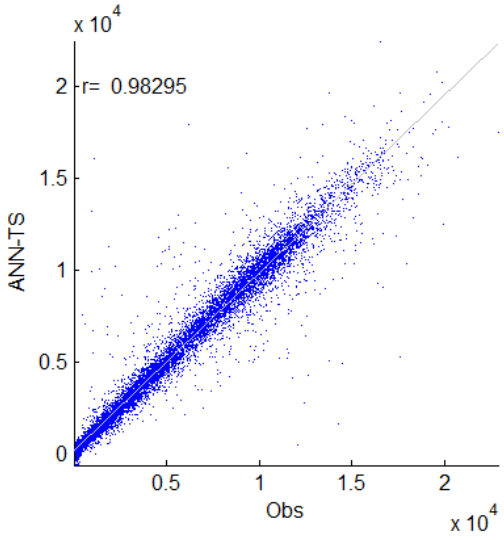
8000
10000
12000


x 10^4
r= 0.98295
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Obs
x 10^4
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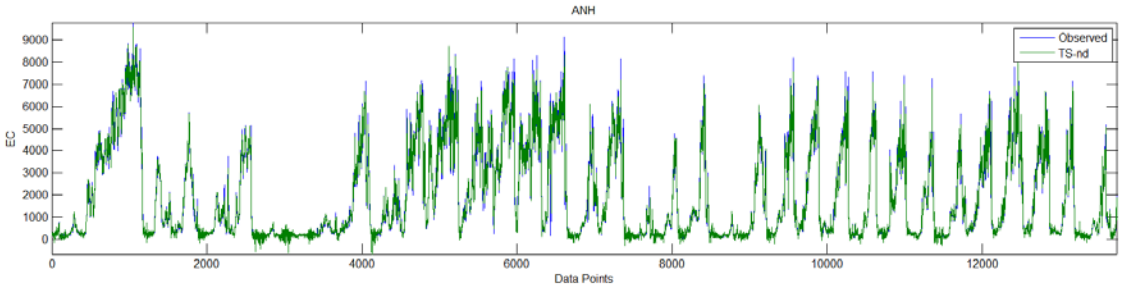
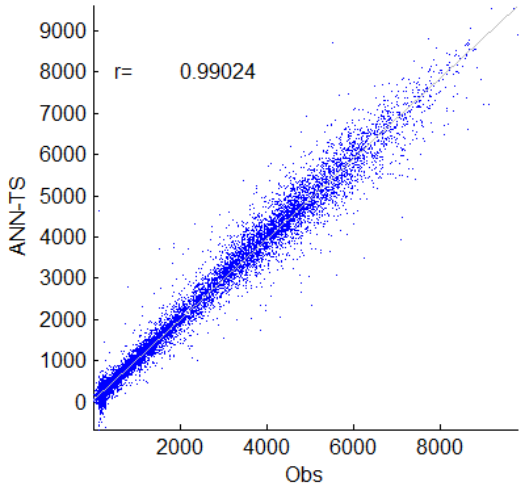
1
1.5
2


ANH
Observed
TS-nd
EC
Data Points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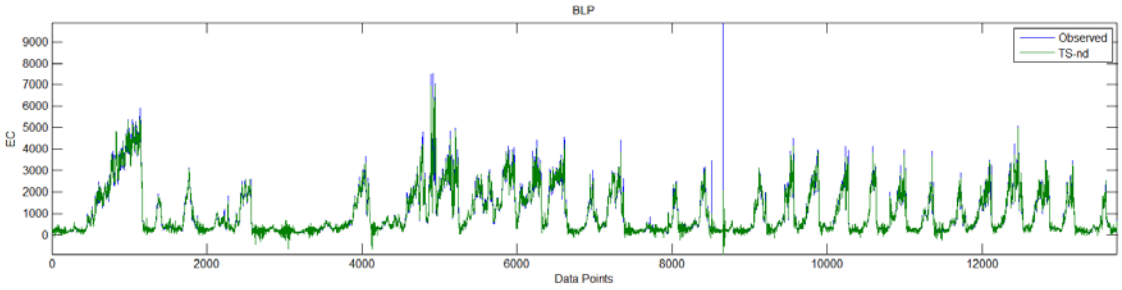
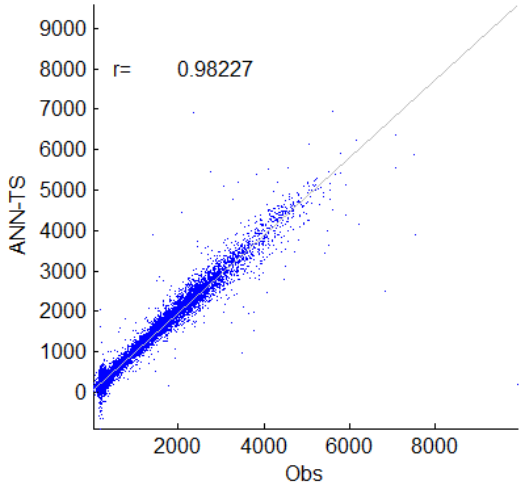
ANN-TS
Obs


BLP
Observed
TS-nd
EC
Data Points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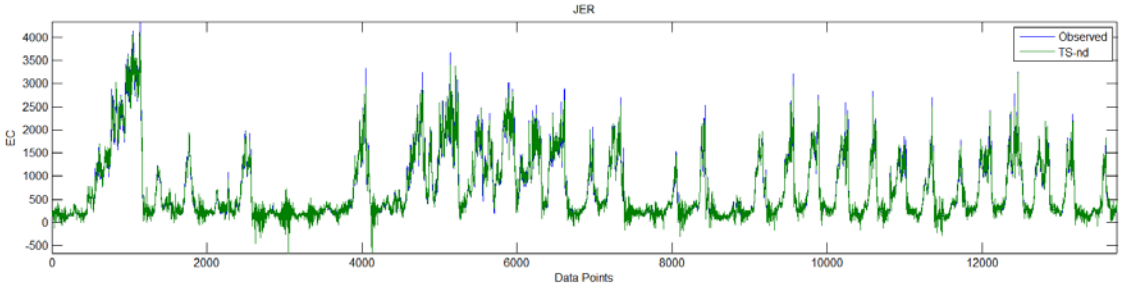
JER
Observed
TS-nd
EC
Data Points
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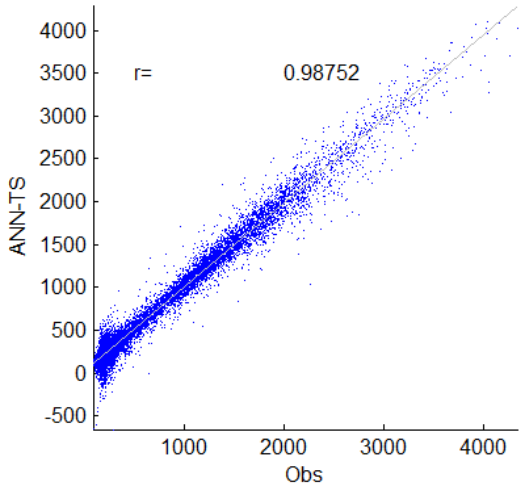
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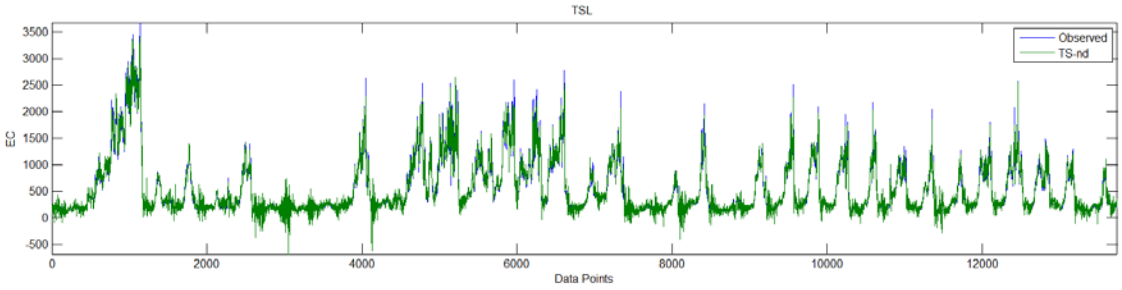
TSL
Observed
TS-nd
EC
Data Points
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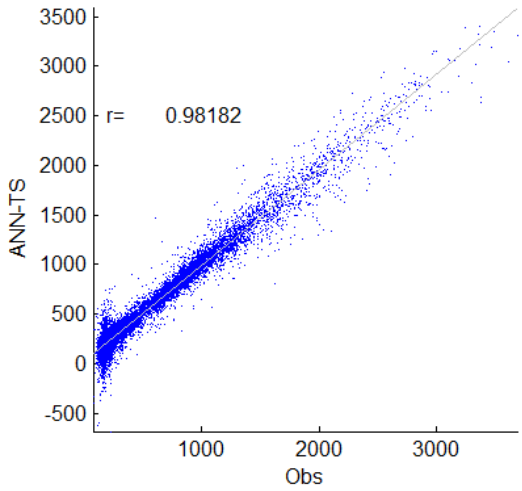
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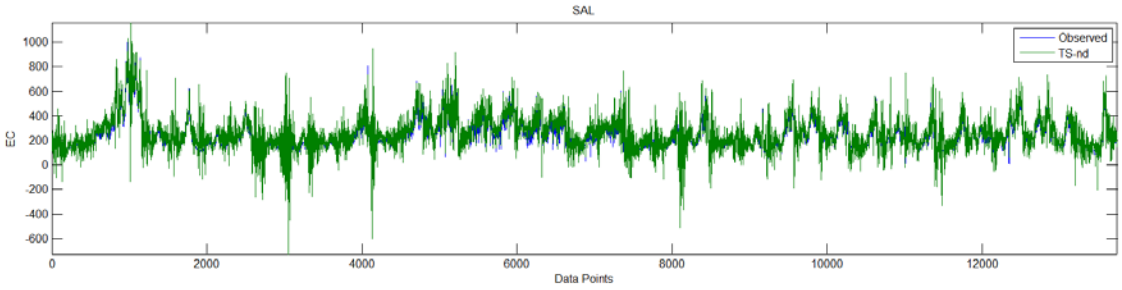
SAL
Observed
TS-nd
EC
Data Points
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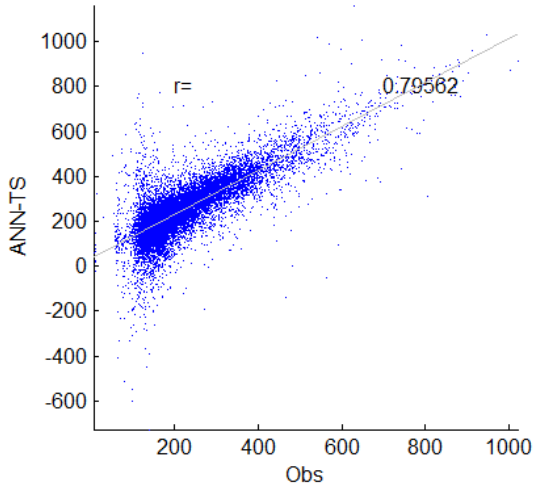
8000
10000
12000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ANN-TS
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