high_stress_comparison_fixed

February 5, 2025

[29]:
```
import pandas as pd
import matplotlib.pyplot as plt
import numpy as np
```

[30]:
```
og_dt = pd.read_csv("../02_program_code/
 ↪high-stress_standard_output_timesteps_final.csv")
new_dt = pd.read_csv("../02_program_code/high-stress_test_output_final.csv")
```

[31]:
```
new_dt = new_dt[new_dt['year'] != 0]
og_dt = og_dt[og_dt['year'] != 0]
```

[32]:
```
new_dt.head()
```

[32]:

	year	julian-day	standard-time	solar	rain	wind	T-air	T-soil	\
0	2010	1	0	0.0	0.0	3.03	-12.020204	-8.220554	
1	2010	1	1	0.0	0.0	2.88	-11.830204	-8.280554	
2	2010	1	2	0.0	0.0	2.73	-11.430113	-8.340554	
3	2010	1	3	0.0	0.0	2.82	-11.330113	-8.400554	
4	2010	1	4	0.0	0.0	2.90	-11.446826	-8.450554	

	D-MD	P0	…	end-ground-water	end-E	end-drainage	\
0	0.105436	0.000000	…	0	0.0	0.0	
1	0.109861	0.010078	…	0	0.0	0.0	
2	0.116197	0.009955	…	0	0.0	0.0	
3	0.118036	0.010083	…	0	0.0	0.0	
4	0.117627	0.009960	…	0	0.0	0.0	

	end-soil-evap	end-ET	end-Anet-la	end-total-water-input	end-PLC-plant	\
0	0.0	0.0	0.000000	0.0	0.0	
1	0.0	0.0	0.000000	0.0	0.0	
2	0.0	0.0	-0.151212	0.0	0.0	
3	0.0	0.0	-0.158846	0.0	0.0	
4	0.0	0.0	-0.161165	0.0	0.0	

	end-PLC-xylem	end-runoff
0	0.0	0
1	0.0	0
2	0.0	0

```
3            0.0           0
4            0.0           0

[5 rows x 67 columns]
```

[33]:
```
og_dt.head()
```

[33]:
```
   year  julian day  standard time  solar W m-2  rain mm  Wind m s-1  \
0  2010           1              0          0.0      0.0        3.03
1  2010           1              1          0.0      0.0        2.88
2  2010           1              2          0.0      0.0        2.73
3  2010           1              3          0.0      0.0        2.82
4  2010           1              4          0.0      0.0        2.90

     T air C  T soil C  D MD (kPa)    P0 Mpa  …  vcmax  empty5  empty6  \
0 -12.020204 -8.220554    0.105436  0.000000  …      0       0       0
1 -11.830204 -8.280554    0.109861  0.010078  …      0       0       0
2 -11.430113 -8.340554    0.116197  0.009955  …      0       0       0
3 -11.330113 -8.400554    0.118036  0.010083  …      0       0       0
4 -11.446826 -8.450554    0.117627  0.009960  …      0       0       0

   empty7  empty8  empty9  empty10  empty11  empty12  empty13
0       0       0       0        0      NaN      NaN      NaN
1       0       0       0        0      NaN      NaN      NaN
2       0       0       0        0      NaN      NaN      NaN
3       0       0       0        0      NaN      NaN      NaN
4       0       0       0        0      NaN      NaN      NaN

[5 rows x 82 columns]
```

[34]:
```
og_dt.columns
```

[34]:
```
Index(['year', 'julian day', 'standard time', 'solar W m-2', 'rain mm',
       'Wind m s-1', 'T air C', 'T soil C', 'D MD (kPa)', 'P0 Mpa', 'P1 MPa',
       'P2 MPa', 'P3 MPa', 'P4 MPa', 'P5 MPa', 'Predawn MPa', 'P Mpa',
       'E mmol m-2s-1', 'Gw mmol m-2s-1', 'Leaf air vpd kPa', 'leaftempt',
       'Anet per leaf area umol', 's-1m-2', 'ci Pa', 'PPFD sun', 'S P Mpa',
       'S E mmol m-2s-1', 'S Gw mmol m-2s-1', 'S Leaf air vpd kPa',
       'S leaftempt', 'Anet umol s-1m-2', 'empty1', 'S ci Pa', 'PPFD shade',
       'E tree', 'Anet Tree per Leaf Area (umol s-1m-2)', 'empty2',
       'pcrit MPa', 'Ecrit', 'Pleaf MPa', 'Pstem MPa', 'Proot MPa',
       'k stem kghr-1m-2', 'kleaf kghr-1m-2', 'kplant kghr-1m-2',
       'kxylem kghr-1m-2', 'kroot 1 kghr-1m-2', 'kroot 2 kghr-1m-2',
       'kroot 3 kghr-1m-2', 'kroot 4 kghr-1m-2', 'kroot 5 kghr-1m-2',
       'kroot all kghr-1m-2', 'Eroot 1 (mmol s-1 m-2 leaf area)',
       'Eroot 2 (mmol s-1 m-2 leaf area)', 'Eroot 3 (mmol s-1 m-2 leaf area)',
       'Eroot 4 (mmol s-1 m-2 leaf area)', 'Eroot 5 (mmol s-1 m-2 leaf area)',
```

```
       'empty3', 'empty4', 'water content mm',
       'water content delta (mm timestep-1)', 'rain (mm timestep-1)',
       'ground water input (mm timestep-1)', 'E (mm timestep-1)',
       'drainage (mm timestep-1)', 'soil evap (mm timestep-1)',
       'ET (mm timestep-1)', 'Anet per leaf area (mmol timestep-1 m-2)',
       'total water input (mm timestep-1)', 'PLC plant', 'PLC xylem',
       'runoff (mm timestep-1)', 'vcmax', 'empty5', 'empty6', 'empty7',
       'empty8', 'empty9', 'empty10', 'empty11', 'empty12', 'empty13'],
      dtype='object')
```

[35]:
```
og_dt = og_dt.drop(['s-1m-2', 'empty1', 'empty2', 'empty3', 'empty4', 'vcmax',␣
↪'empty5', 'empty6', 'empty7', 'empty8', 'empty9', 'empty10', 'empty11',␣
↪'empty12', 'empty13'], axis=1)
```

[36]:
```
og_dt.columns
```

[36]:
```
Index(['year', 'julian day', 'standard time', 'solar W m-2', 'rain mm',
       'Wind m s-1', 'T air C', 'T soil C', 'D MD (kPa)', 'P0 Mpa', 'P1 MPa',
       'P2 MPa', 'P3 MPa', 'P4 MPa', 'P5 MPa', 'Predawn MPa', 'P Mpa',
       'E mmol m-2s-1', 'Gw mmol m-2s-1', 'Leaf air vpd kPa', 'leaftempt',
       'Anet per leaf area umol', 'ci Pa', 'PPFD sun', 'S P Mpa',
       'S E mmol m-2s-1', 'S Gw mmol m-2s-1', 'S Leaf air vpd kPa',
       'S leaftempt', 'Anet umol s-1m-2', 'S ci Pa', 'PPFD shade', 'E tree',
       'Anet Tree per Leaf Area (umol s-1m-2)', 'pcrit MPa', 'Ecrit',
       'Pleaf MPa', 'Pstem MPa', 'Proot MPa', 'k stem kghr-1m-2',
       'kleaf kghr-1m-2', 'kplant kghr-1m-2', 'kxylem kghr-1m-2',
       'kroot 1 kghr-1m-2', 'kroot 2 kghr-1m-2', 'kroot 3 kghr-1m-2',
       'kroot 4 kghr-1m-2', 'kroot 5 kghr-1m-2', 'kroot all kghr-1m-2',
       'Eroot 1 (mmol s-1 m-2 leaf area)', 'Eroot 2 (mmol s-1 m-2 leaf area)',
       'Eroot 3 (mmol s-1 m-2 leaf area)', 'Eroot 4 (mmol s-1 m-2 leaf area)',
       'Eroot 5 (mmol s-1 m-2 leaf area)', 'water content mm',
       'water content delta (mm timestep-1)', 'rain (mm timestep-1)',
       'ground water input (mm timestep-1)', 'E (mm timestep-1)',
       'drainage (mm timestep-1)', 'soil evap (mm timestep-1)',
       'ET (mm timestep-1)', 'Anet per leaf area (mmol timestep-1 m-2)',
       'total water input (mm timestep-1)', 'PLC plant', 'PLC xylem',
       'runoff (mm timestep-1)'],
      dtype='object')
```

[37]:
```
new_dt.columns
```

[37]:
```
Index(['year', 'julian-day', 'standard-time', 'solar', 'rain', 'wind', 'T-air',
       'T-soil', 'D-MD', 'P0', 'P1', 'P2', 'P3', 'P4', 'P5', 'P-PD', 'P-MD',
       'E-MD', 'GW', 'leaf-air-vpd', 'leaftemp', 'Anet-la', 'ci', 'PPFD',
       'S-P-MD', 'S-E-MD', 'S-GW', 'S-leaf-air-vpd', 'S-leaftempt',
       'S-Anet-la', 'S-ci', 'S-PPFD', 'S-E-tree', 'Anet-tree', 'Pcrit',
       'Ecrit', 'P-leaf', 'P-stem', 'P-root', 'K-stem', 'K-leaf', 'K-plant',
```

```
       'K-xylem', 'K-root-1', 'K-root-2', 'K-root-3', 'K-root-4', 'K-root-5',
       'K-root-all', 'E-root-1', 'E-root-2', 'E-root-3', 'E-root-4',
       'E-root-5', 'water-content', 'water-content-delta', 'end-rain',
       'end-ground-water', 'end-E', 'end-drainage', 'end-soil-evap', 'end-ET',
       'end-Anet-la', 'end-total-water-input', 'end-PLC-plant',
       'end-PLC-xylem', 'end-runoff'],
      dtype='object')
```

[38]:
```
og_dt = og_dt[(og_dt != 0).any(axis=1)]
new_dt = new_dt[(new_dt != 0).any(axis=1)]
assert len(og_dt) == len(new_dt), "The number of rows in og_dt and new_dt are␣
 ↪not the same"
```

[39]:
```
def cmp_across_index_multivar(old_vars, new_vars, log=False, ylim=None,␣
 ↪xlim=None):
    plt.figure(figsize=(10, 6))
    for var in old_vars:
        plt.plot(og_dt[var] if not log else np.log1p(og_dt[var]), label=f'og_dt␣
 ↪{var}', alpha=0.5)
    for var in new_vars:
        plt.plot(new_dt[var] if not log else np.log1p(new_dt[var]),␣
 ↪label=f'new_dt {var}', alpha=0.5)
    plt.xlabel('Index')
    if ylim:
        plt.ylim(ylim)
    if xlim:
        plt.xlim(xlim)
    plt.legend()
    plt.show()
```

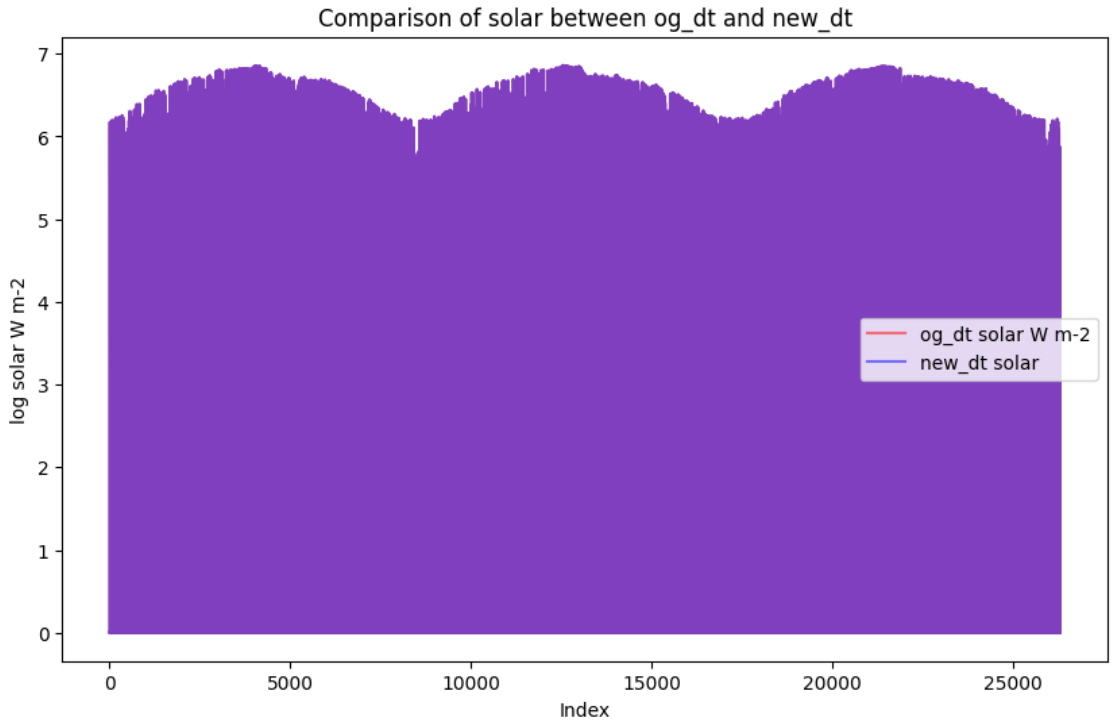
[40]:
```
def cmp_across_index(og_var_name, new_var_name, log=False, ylim=None,␣
 ↪xlim=None):
    plt.figure(figsize=(10, 6))
    plt.plot(og_dt[og_var_name] if not log else np.log1p(og_dt[og_var_name]),␣
 ↪label=f'og_dt {og_var_name}', alpha=0.5, color="r")
    plt.plot(new_dt[new_var_name] if not log else np.
 ↪log1p(new_dt[new_var_name]), label=f'new_dt {new_var_name}', alpha=0.5,␣
 ↪color="b")
    plt.xlabel('Index')
    log_str = "log "
    plt.ylabel(f'{log_str if log else ""}{og_var_name}')
    plt.title(f'Comparison of {new_var_name} between og_dt and new_dt')
    if ylim:
        plt.ylim(ylim)
    if xlim:
        plt.xlim(xlim)
    plt.legend()
```

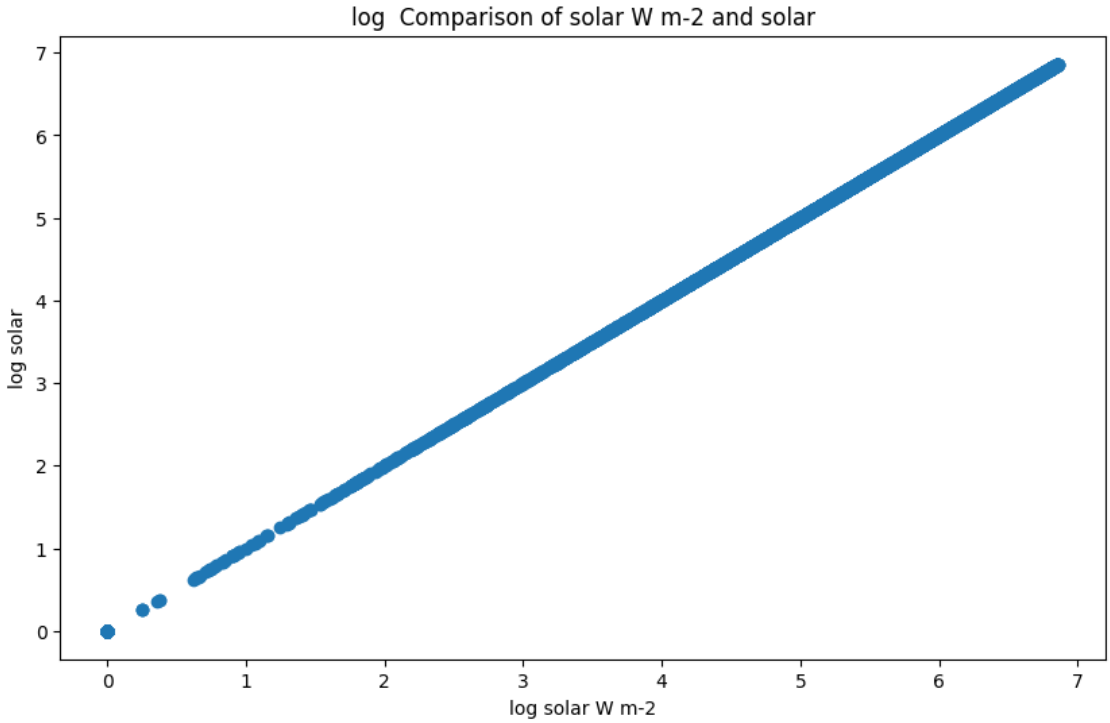
```
    plt.show()
```

[41]:
```
def cmp_with_scatter(og_var_name, new_var_name, log=False):
    plt.figure(figsize=(10, 6))
    plt.scatter(og_dt[og_var_name] if not log else np.
 ↪log1p(og_dt[og_var_name]), new_dt[new_var_name] if not log else np.
 ↪log1p(new_dt[new_var_name]))
    x_label = f'log {og_var_name}' if log else f'{og_var_name}'
    y_label = f'log {new_var_name}' if log else f'{new_var_name}'
    plt.xlabel(x_label)
    plt.ylabel(y_label)
    plt.title(f'{"log " if log else ""} Comparison of {og_var_name} and␣
 ↪{new_var_name}')
    plt.show()
```

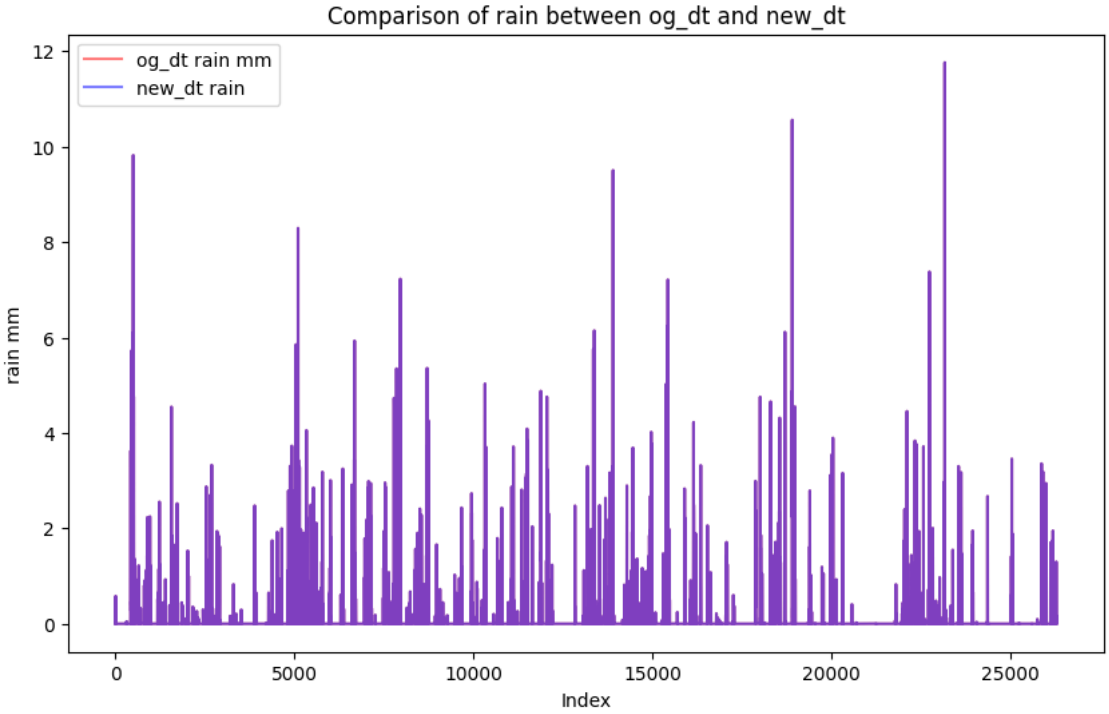
[42]:
```
skip = 3
for i, old_col_name in enumerate(og_dt.columns[skip:]):
    new_col_name = new_dt.iloc[:, i+skip].name
    max_val = max(og_dt[old_col_name].max(), new_dt[new_col_name].max())
    min_val = min(og_dt[old_col_name].min(), new_dt[new_col_name].min())
    log = (max_val - min_val) > 10**2
    print(old_col_name)
    cmp_across_index(old_col_name, new_col_name, log=log)
    cmp_with_scatter(old_col_name, new_col_name, log=log)
```

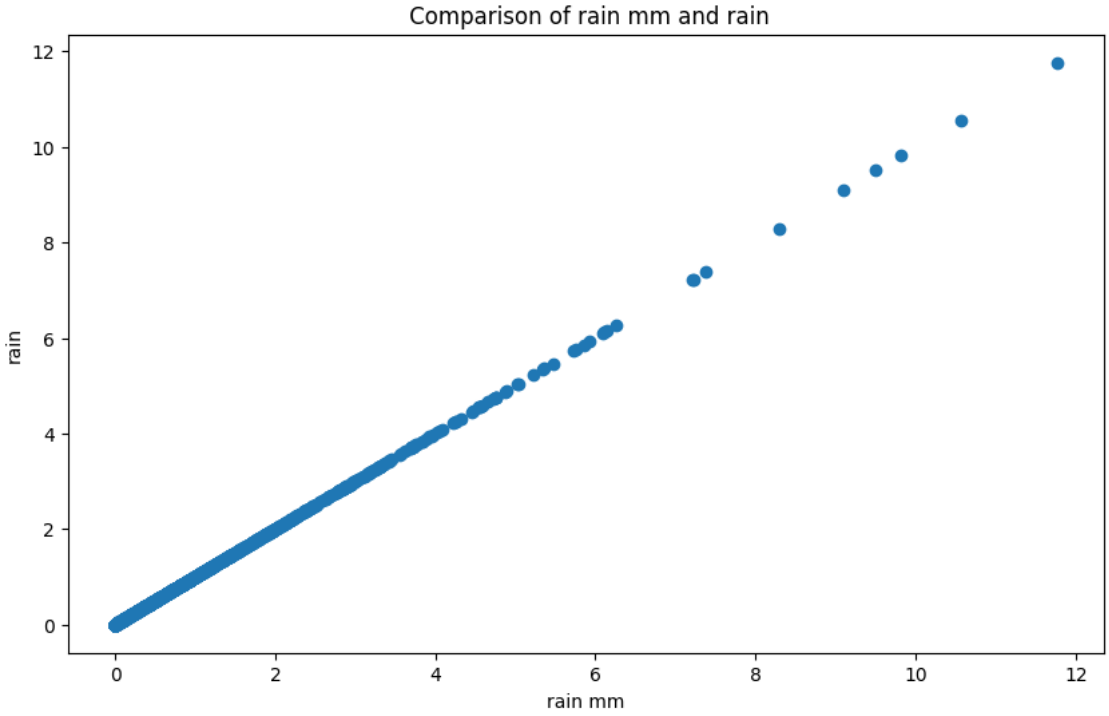
```
solar W m-2
```



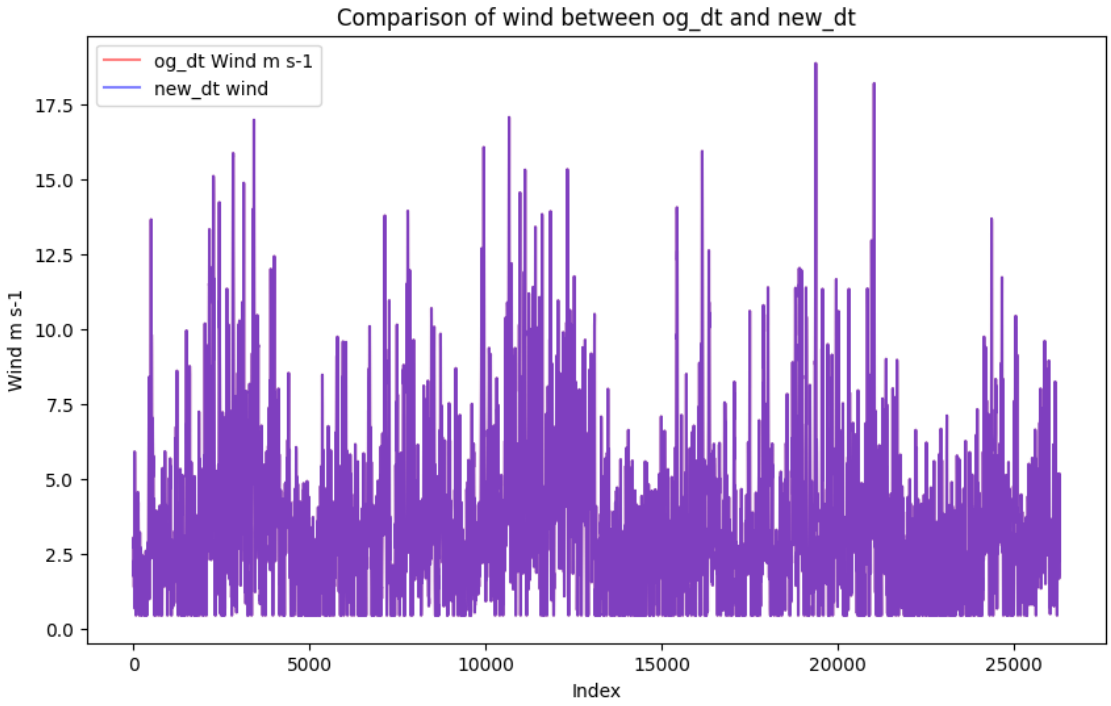

log Comparison of solar W m-2 and solar
log solar
log solar W m-2
0
1
2
3
4
5
6
7

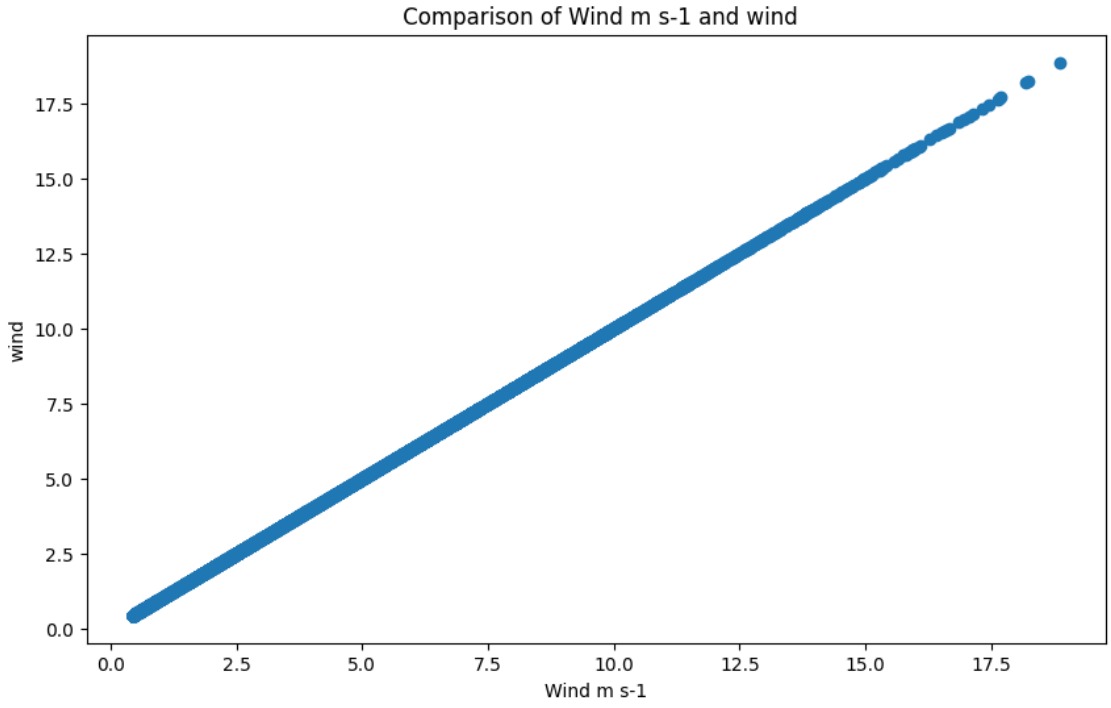
rain mm


Comparison of rain between og_dt and new_dt
og_dt rain mm
new_dt rain
rain mm
Index
0
2
4
6
8
10
12
0
5000
10000
15000
20000
25000

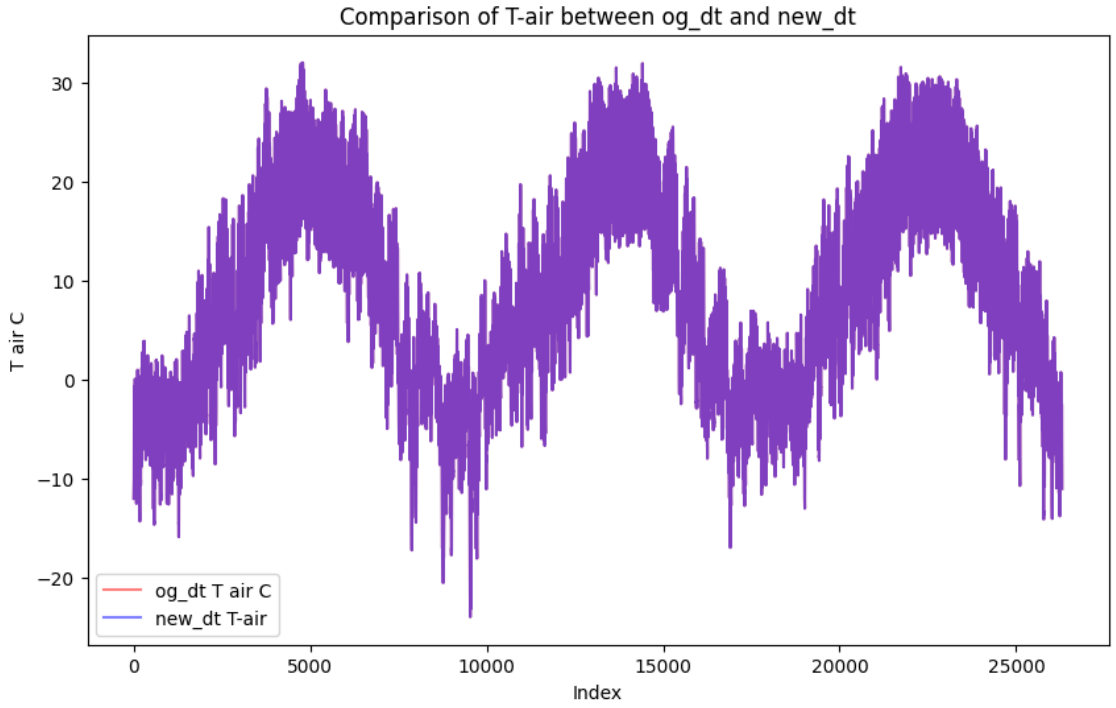

Comparison of rain mm and rain
rain
rain mm
0
2
4
6
8
10
12

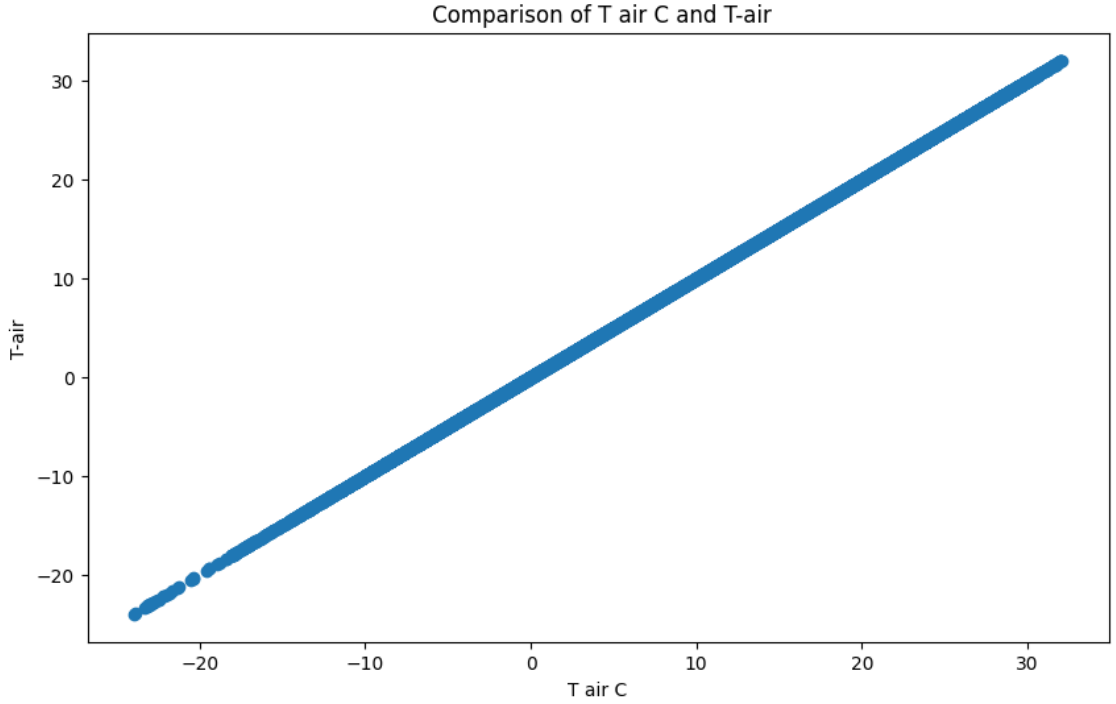
Wind m s-1


Comparison of wind between og_dt and new_dt
og_dt Wind m s-1
new_dt wind
Wind m s-1
Index
0.0
2.5
5.0
7.5
10.0
12.5
15.0
17.5
0
5000
10000
15000
20000
25000

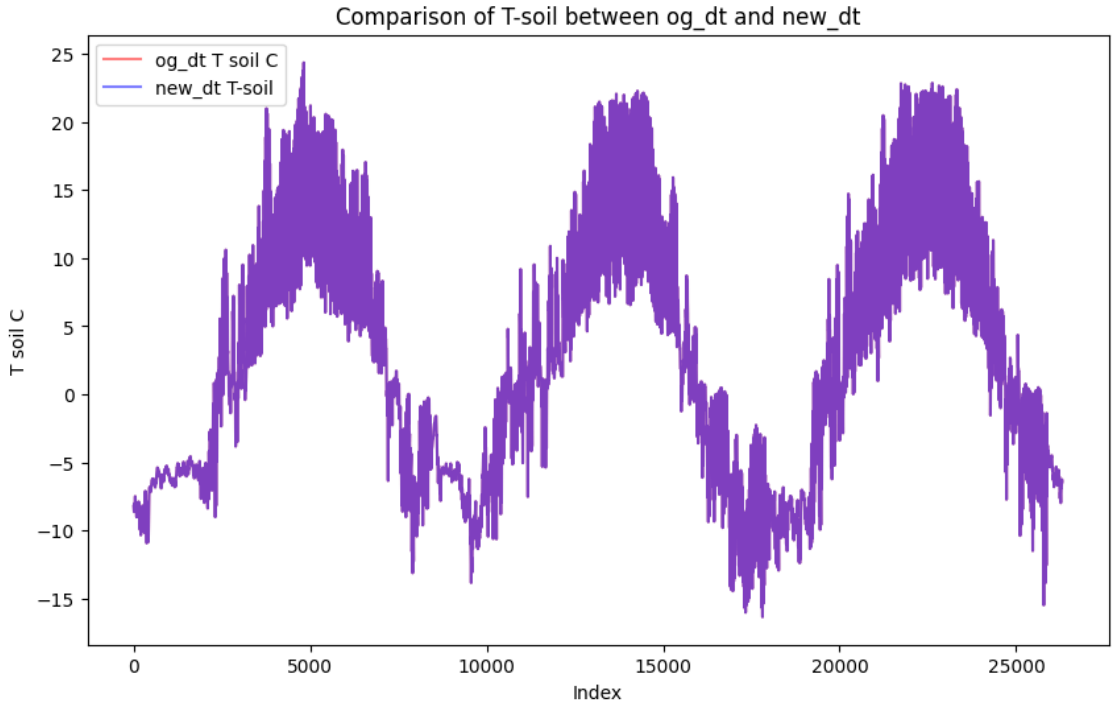

Comparison of Wind m s-1 and wind
wind
Wind m s-1
0.0
2.5
5.0
7.5
10.0
12.5
15.0
17.5

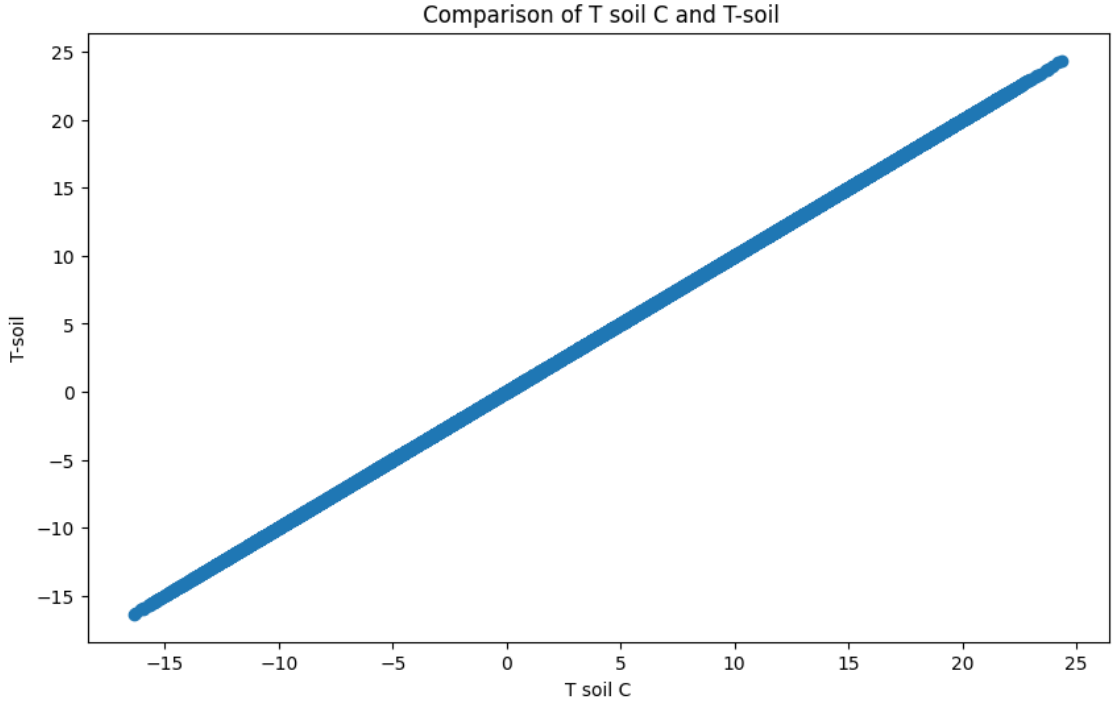
T air C


Comparison of T-air between og_dt and new_dt
T air C
Index
og_dt T air C
new_dt T-air
30
20
10
0
−10
−20
0
5000
10000
15000
20000
25000

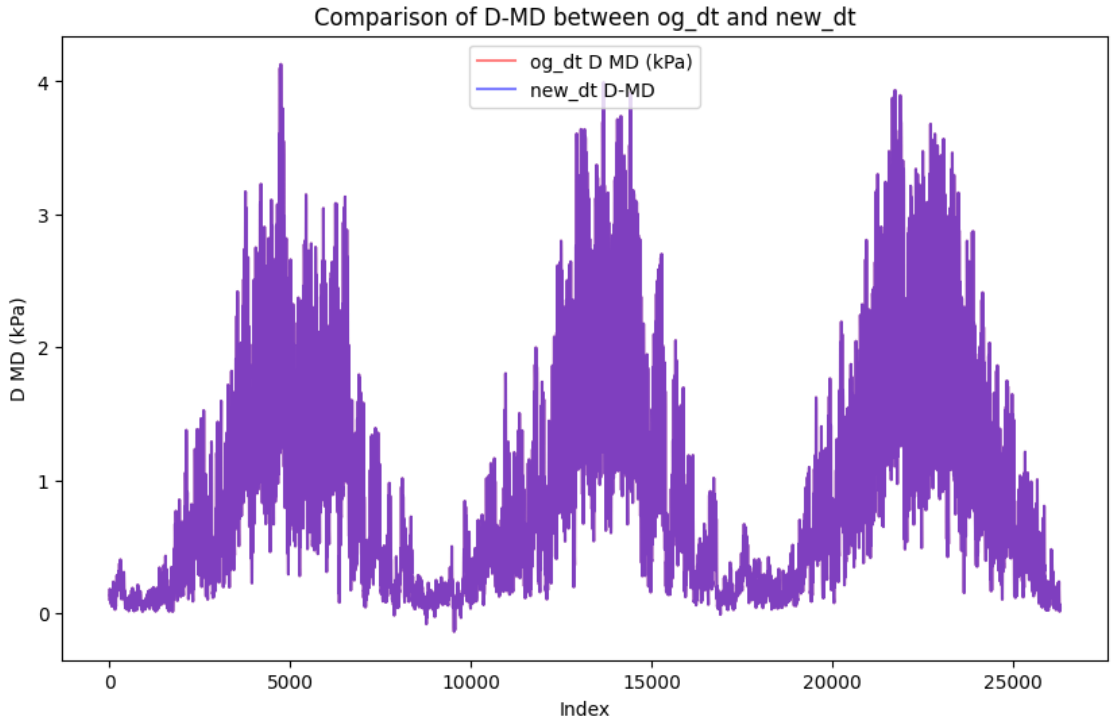

Comparison of T air C and T-air
T-air
T air C
30
20
10
0
−10
−20
−20
−10
0
10
20
30

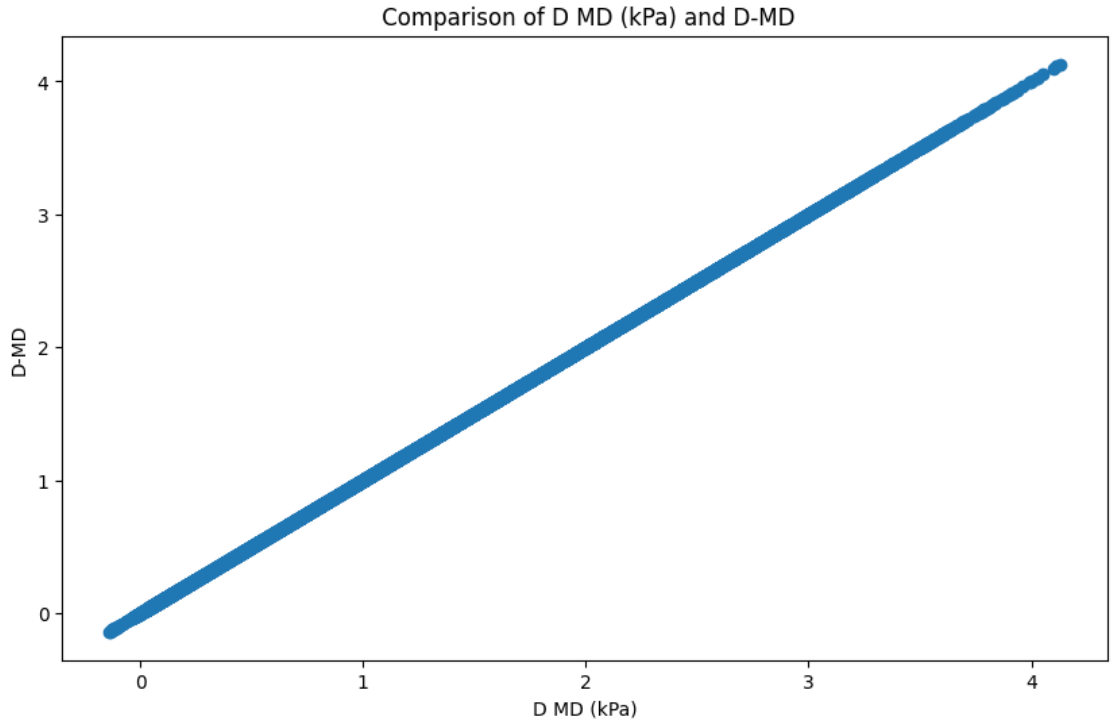
T soil C


Comparison of T-soil between og_dt and new_dt
og_dt T soil C
new_dt T-soil
T soil C
Index
25
20
15
10
5
0
−5
−10
−15
0
5000
10000
15000
20000
25000

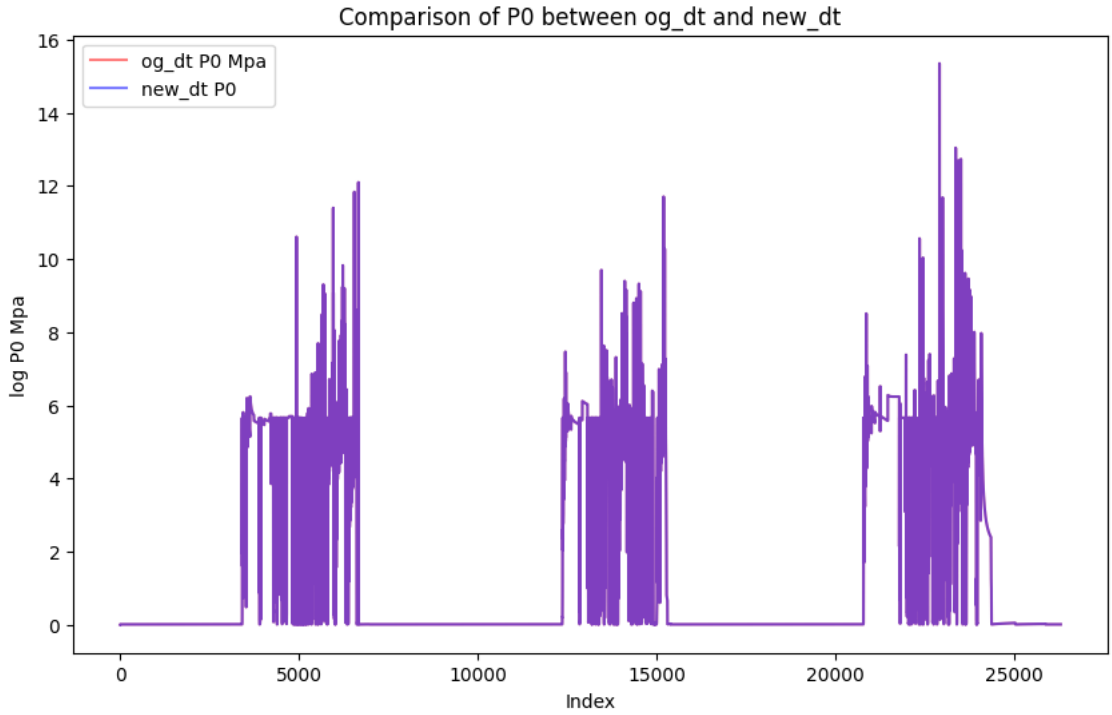

Comparison of T soil C and T-soil
T-soil
T soil C
25
20
15
10
5
0
−5
−10
−15
−15
−10
−5
0
5
10
15
20
25

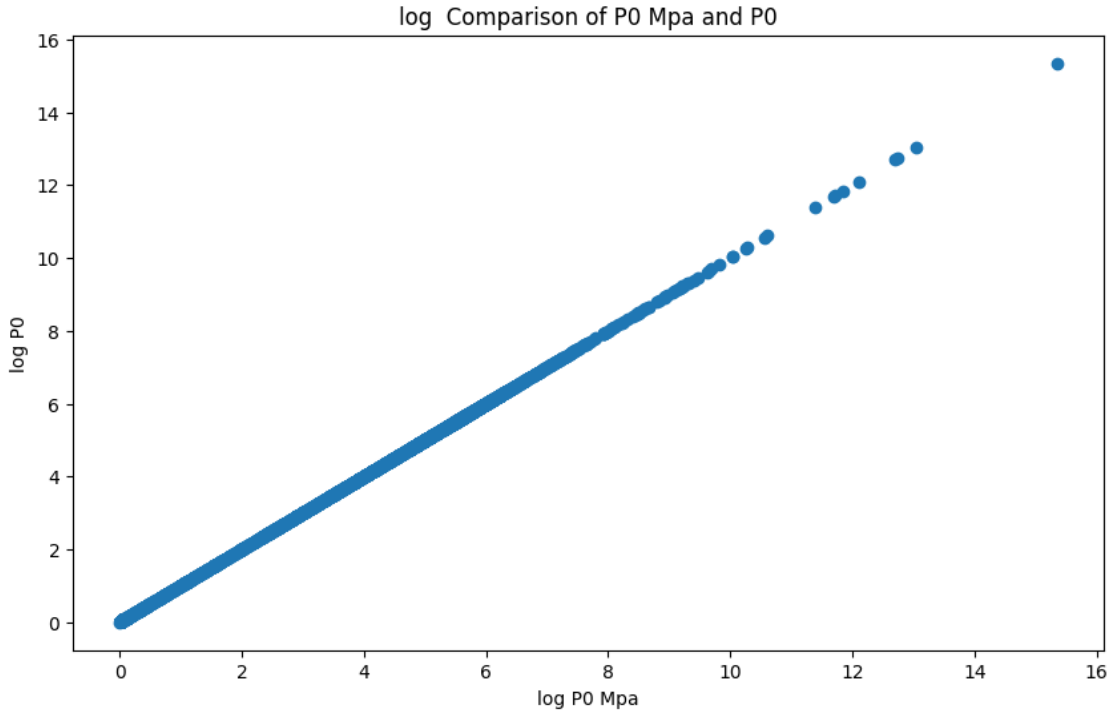
D MD (kPa)


Comparison of D-MD between og_dt and new_dt
og_dt D MD (kPa)
new_dt D-MD
D MD (kPa)
Index
0
1
2
3
4
0
5000
10000
15000
20000
25000

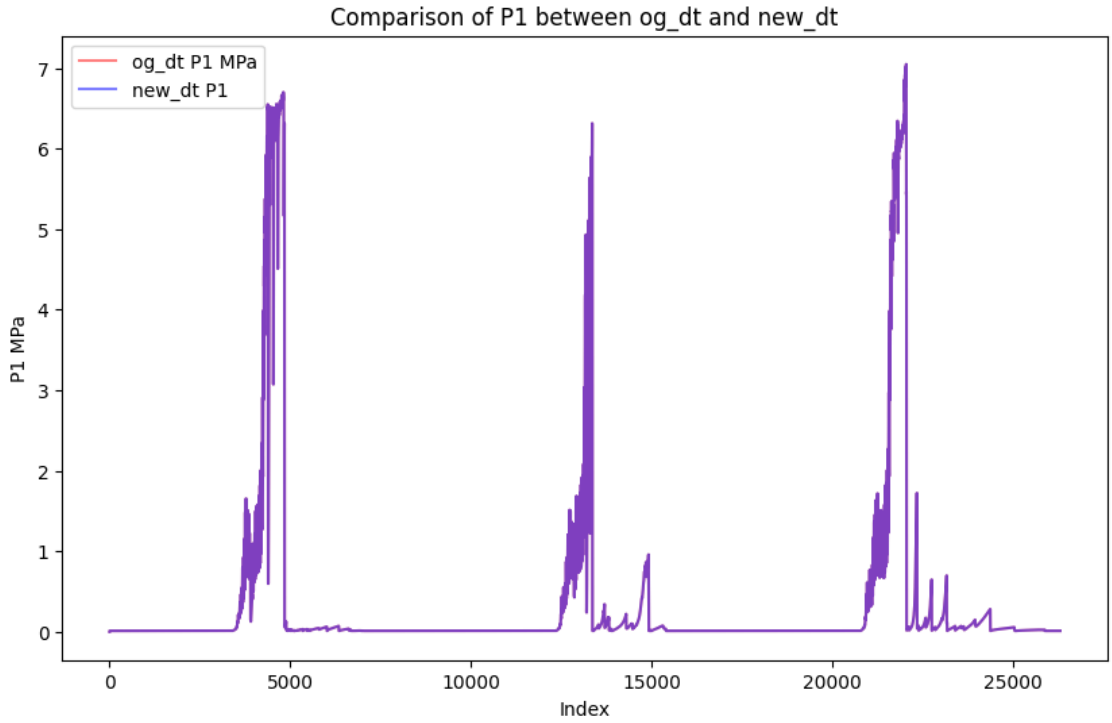

Comparison of D MD (kPa) and D-MD
D-MD
D MD (kPa)
0
1
2
3
4

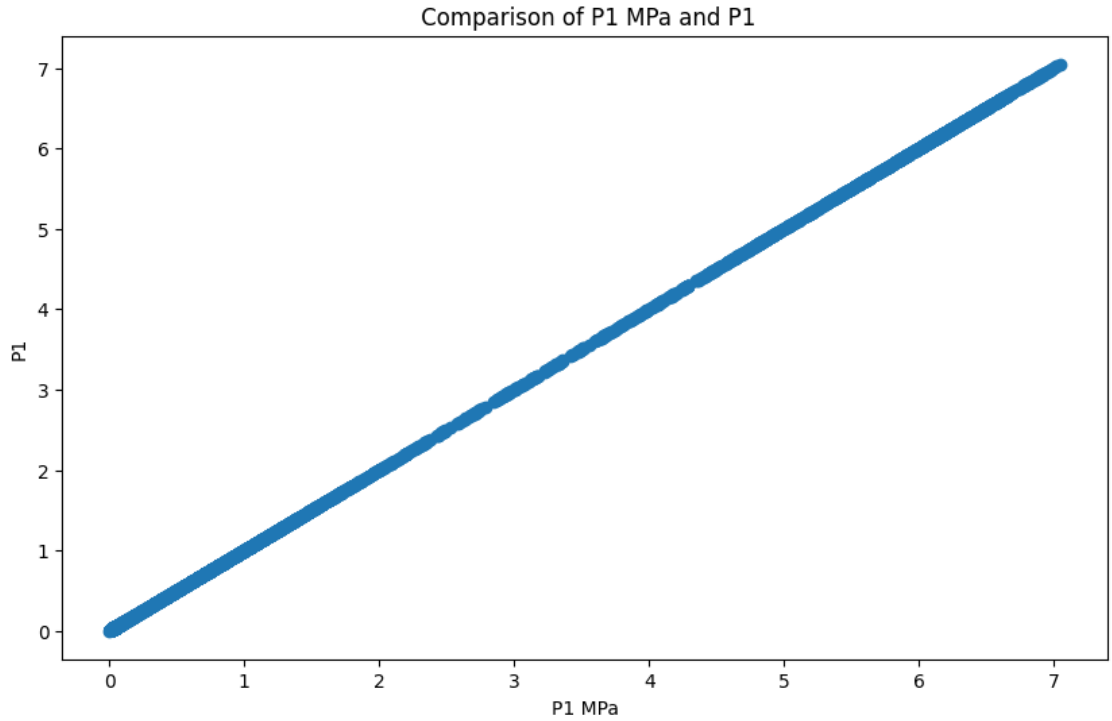
P0 Mpa


Comparison of P0 between og_dt and new_dt
og_dt P0 Mpa
new_dt P0
log P0 Mpa
Index
0
2
4
6
8
10
12
14
16
0
5000
10000
15000
20000
25000

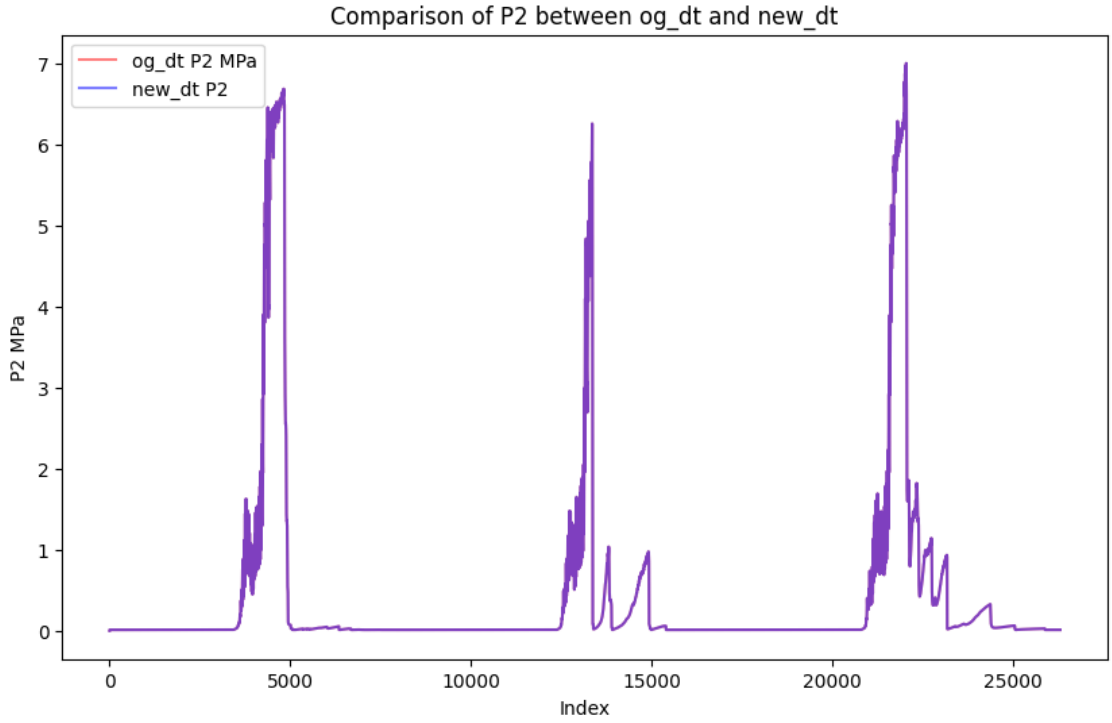

log Comparison of P0 Mpa and P0
log P0
log P0 Mpa
0
2
4
6
8
10
12
14
16

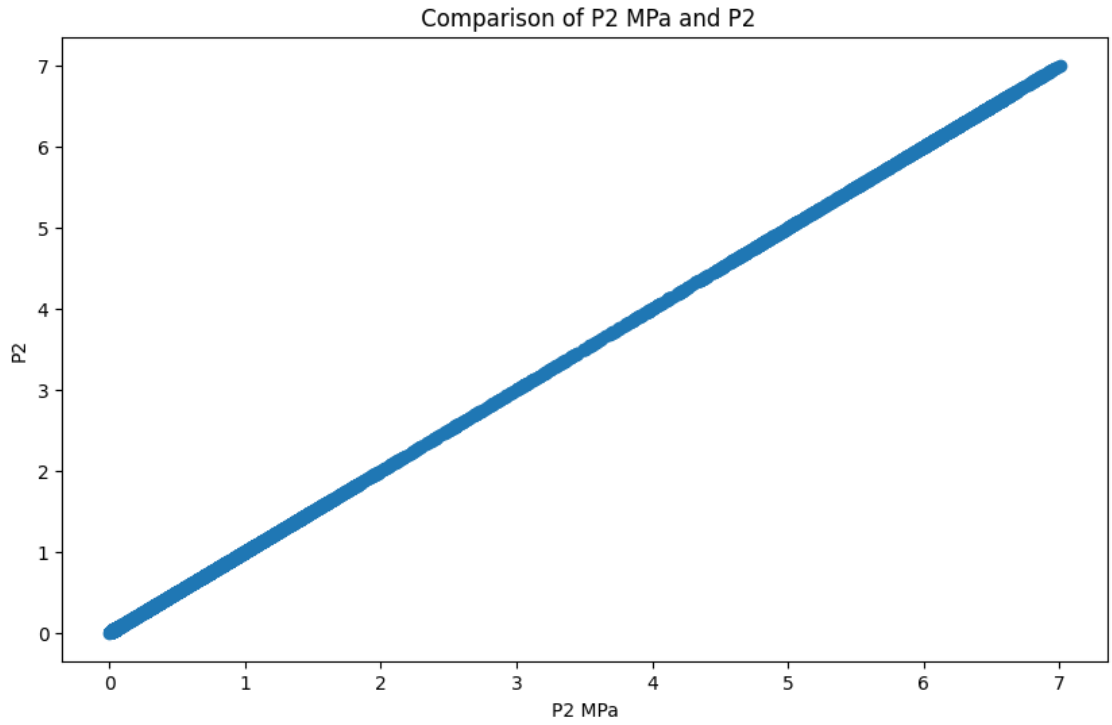
P1 MPa


Comparison of P1 between og_dt and new_dt
og_dt P1 MPa
new_dt P1
P1 MPa
Index
0
1
2
3
4
5
6
7
0
5000
10000
15000
20000
25000

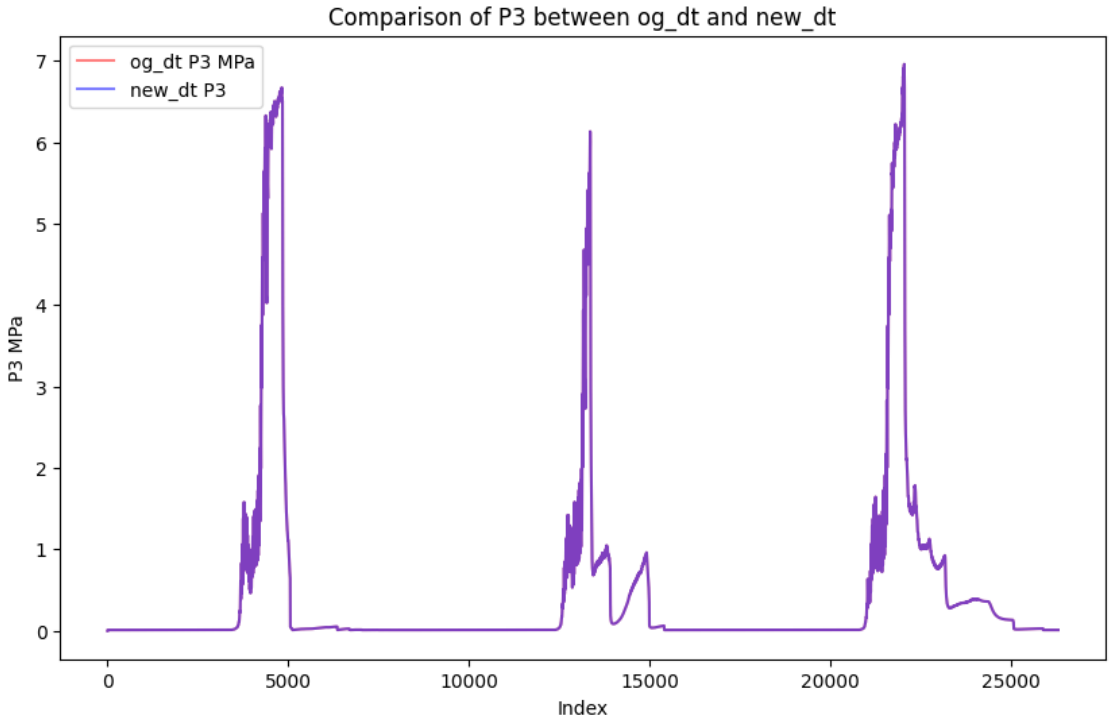

Comparison of P1 MPa and P1
P1
P1 MPa
0
1
2
3
4
5
6
7

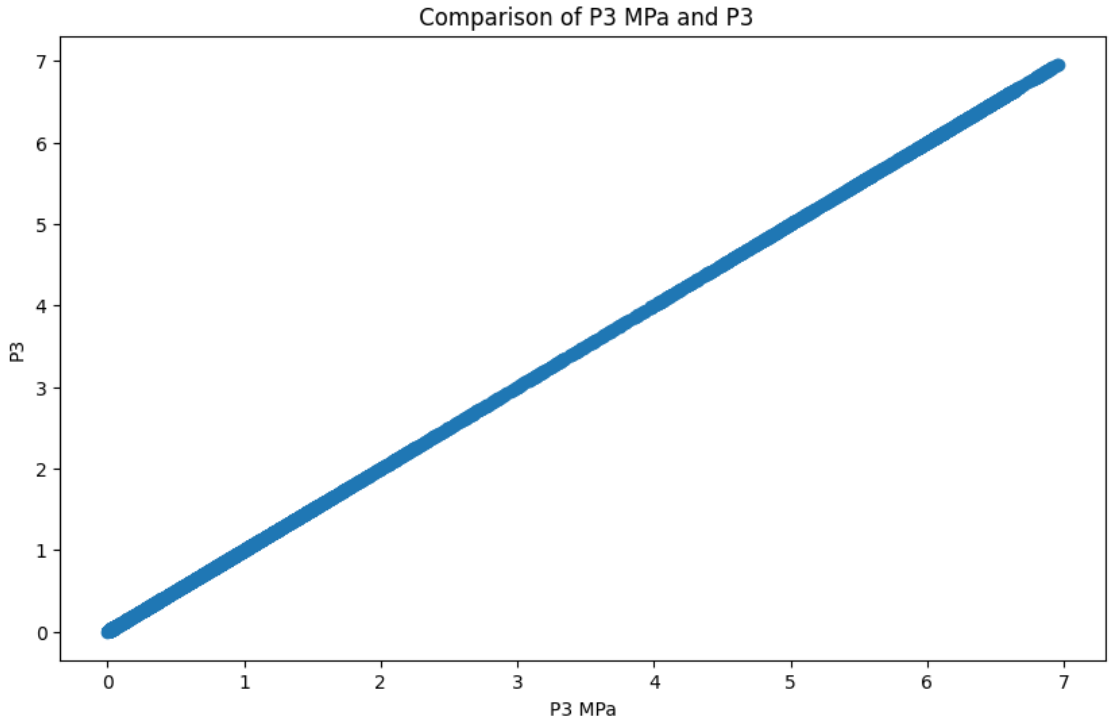
P2 MPa


Comparison of P2 between og_dt and new_dt
og_dt P2 MPa
new_dt P2
P2 MPa
Index
0
1
2
3
4
5
6
7
0
5000
10000
15000
20000
25000

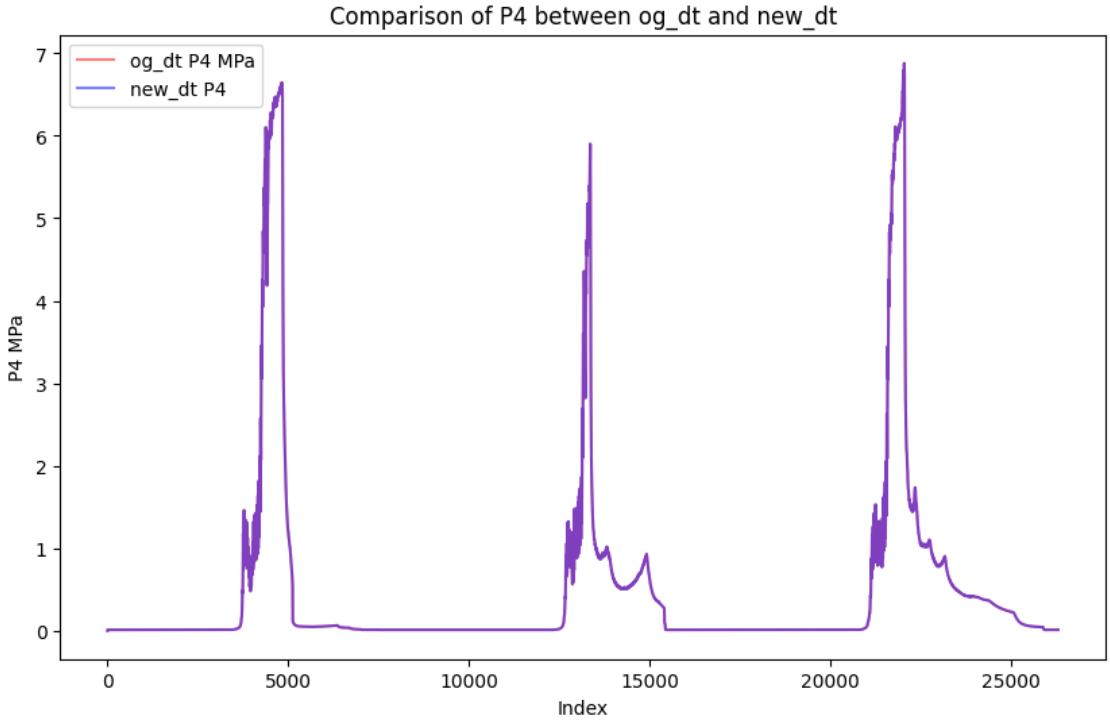

Comparison of P2 MPa and P2
P2
P2 MPa
0
1
2
3
4
5
6
7

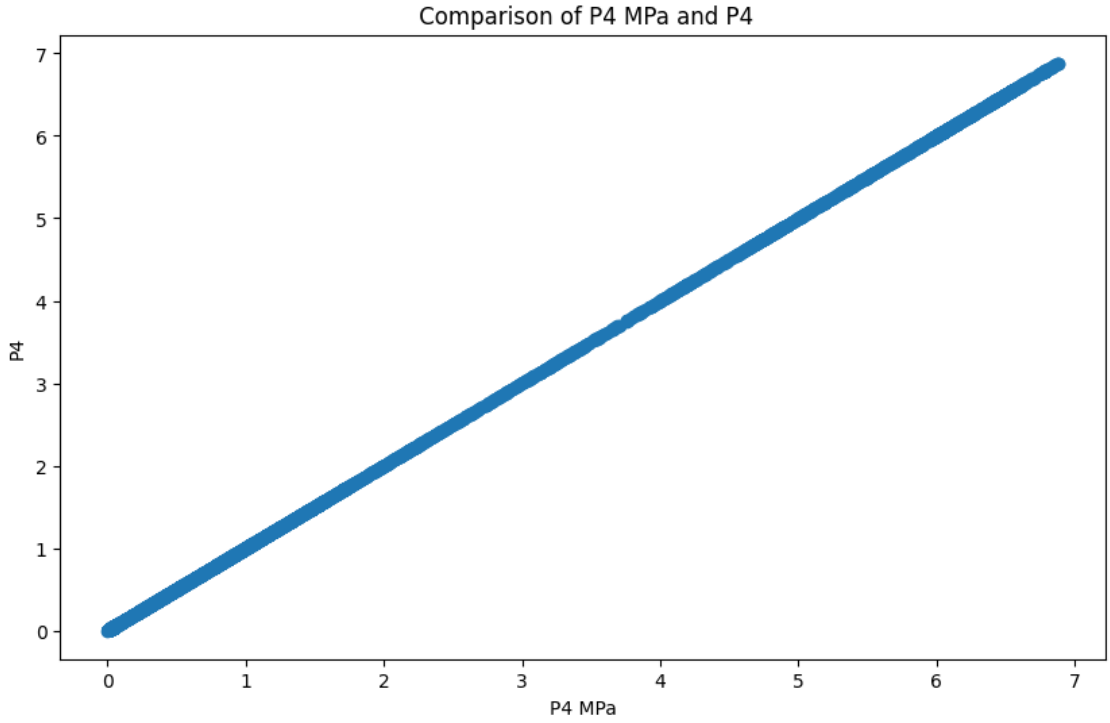
P3 MPa


Comparison of P3 between og_dt and new_dt
og_dt P3 MPa
new_dt P3
P3 MPa
Index
0
1
2
3
4
5
6
7
0
5000
10000
15000
20000
25000

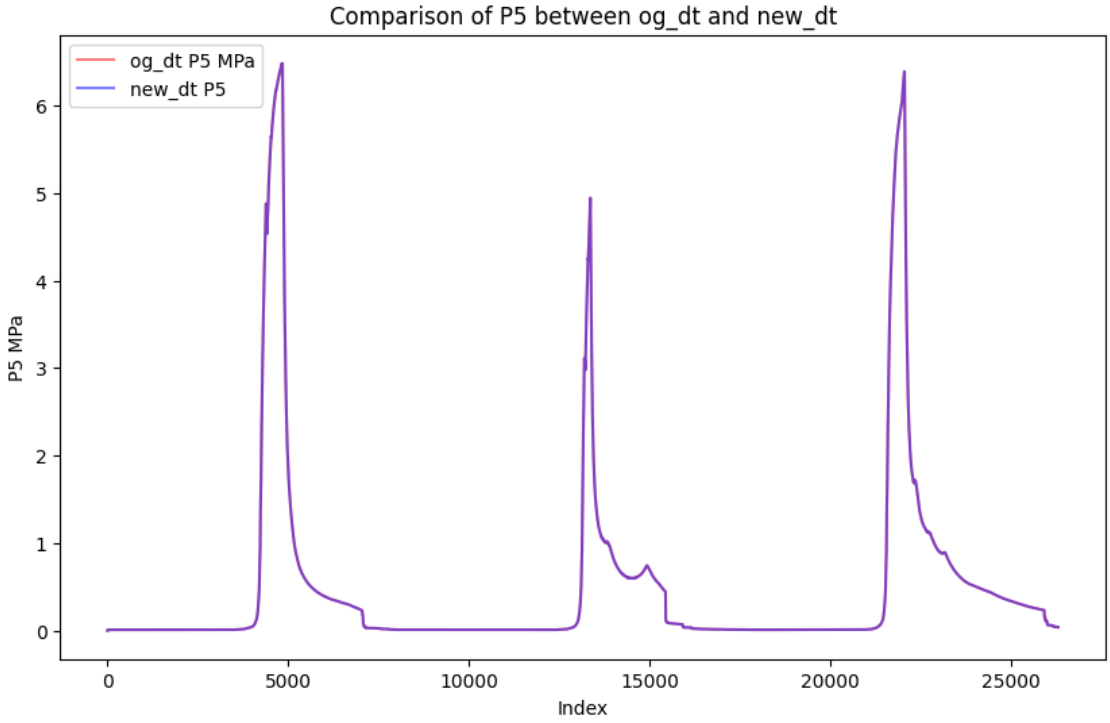

Comparison of P3 MPa and P3
P3
P3 MPa
0
1
2
3
4
5
6
7

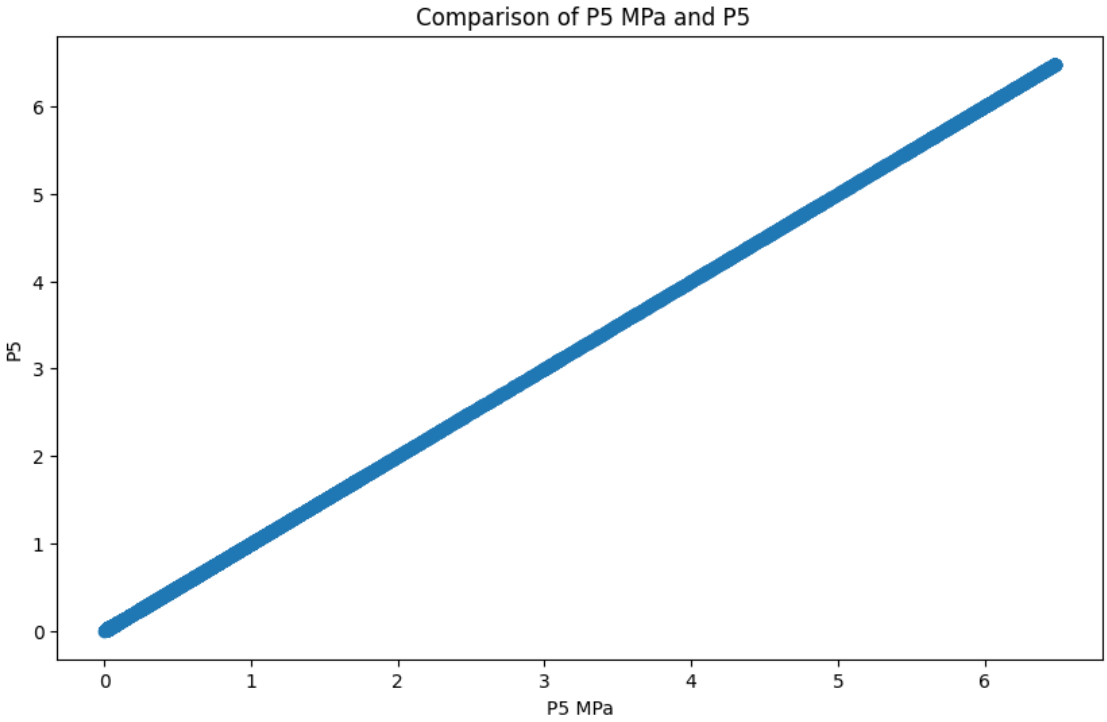
P4 MPa


Comparison of P4 between og_dt and new_dt
og_dt P4 MPa
new_dt P4
P4 MPa
Index
0
5000
10000
15000
20000
25000

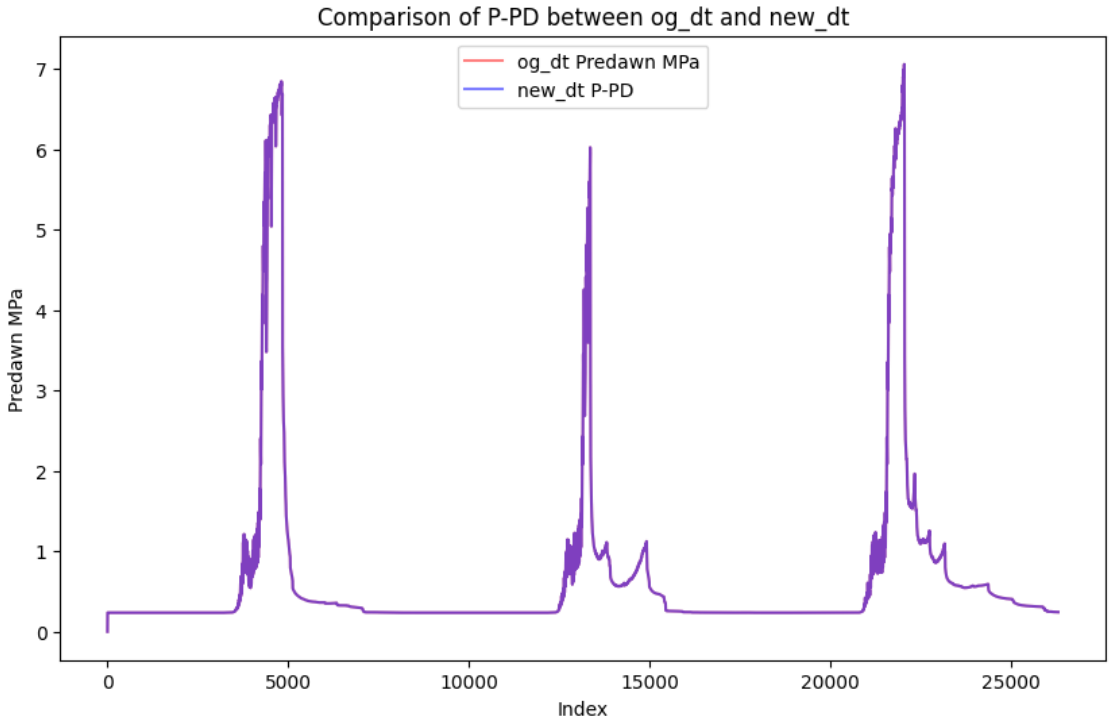

Comparison of P4 MPa and P4
P4
P4 MPa
0
1
2
3
4
5
6
7

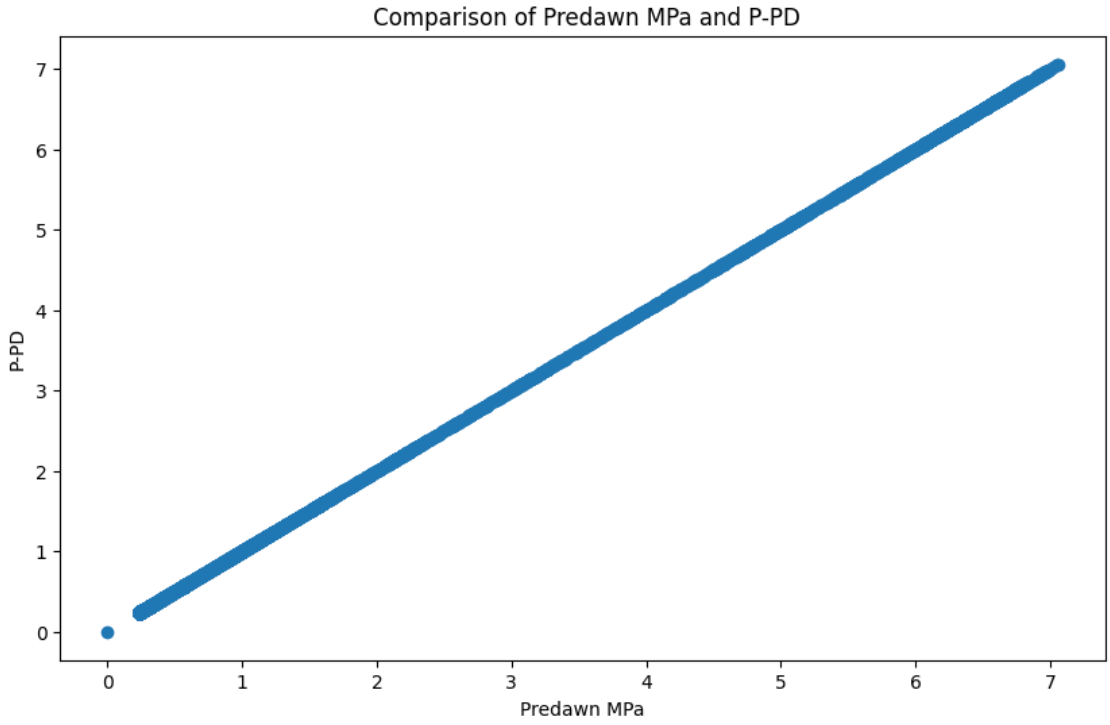
P5 MPa


Comparison of P5 between og_dt and new_dt
og_dt P5 MPa
new_dt P5
P5 MPa
Index
0
5000
10000
15000
20000
25000

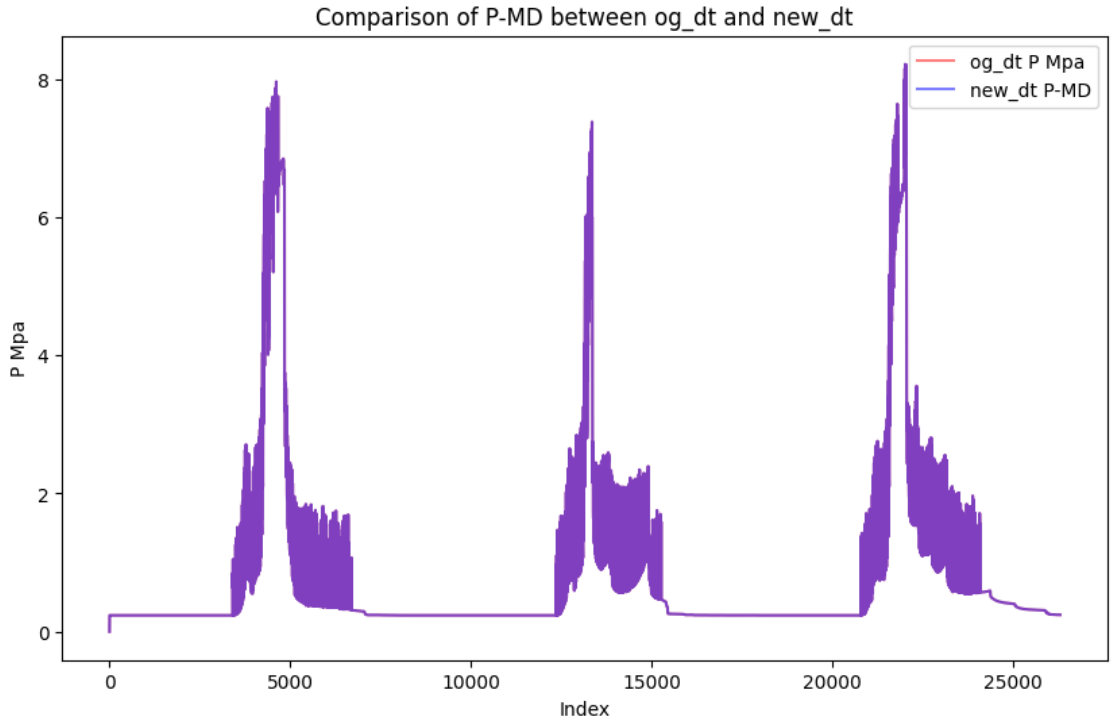


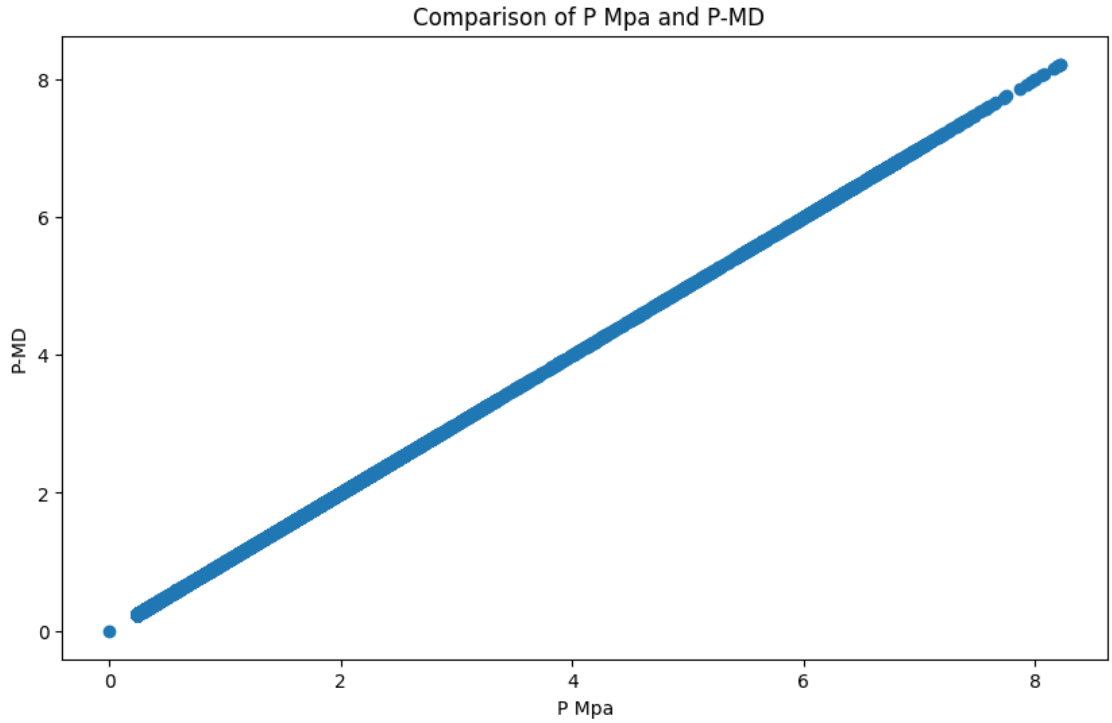
Predawn MPa


Comparison of P-PD between og_dt and new_dt
og_dt Predawn MPa
new_dt P-PD
Predawn MPa
Index
0
1
2
3
4
5
6
7
0
5000
10000
15000
20000
25000

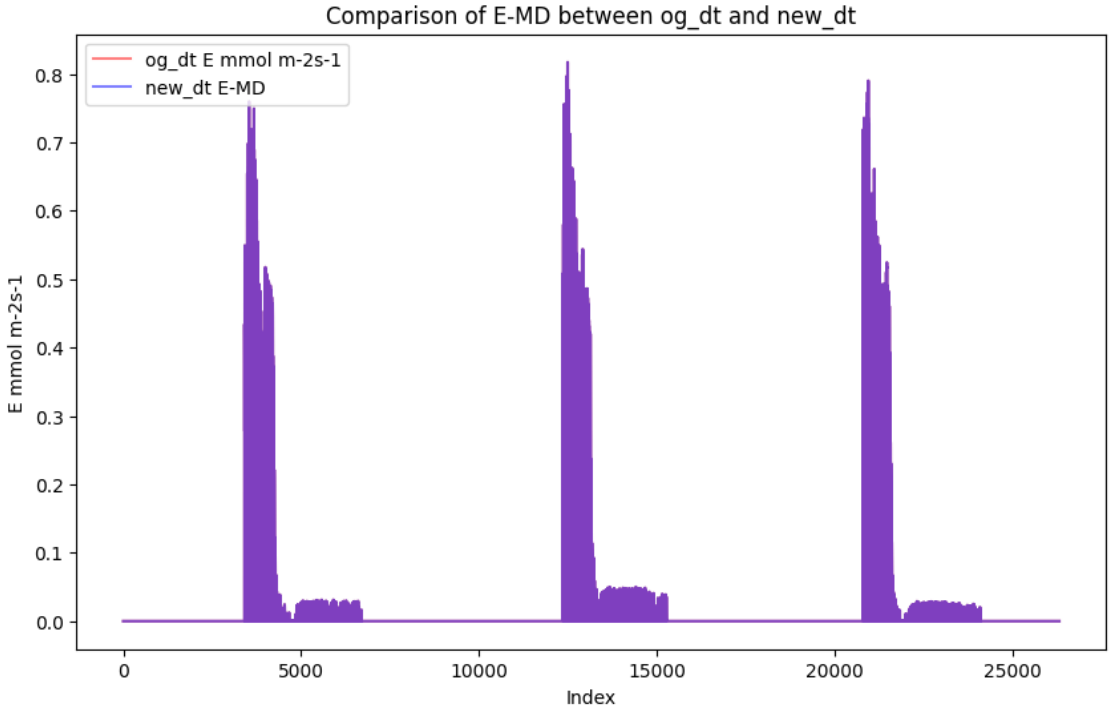

Comparison of Predawn MPa and P-PD
P-PD
Predawn MPa
0
1
2
3
4
5
6
7

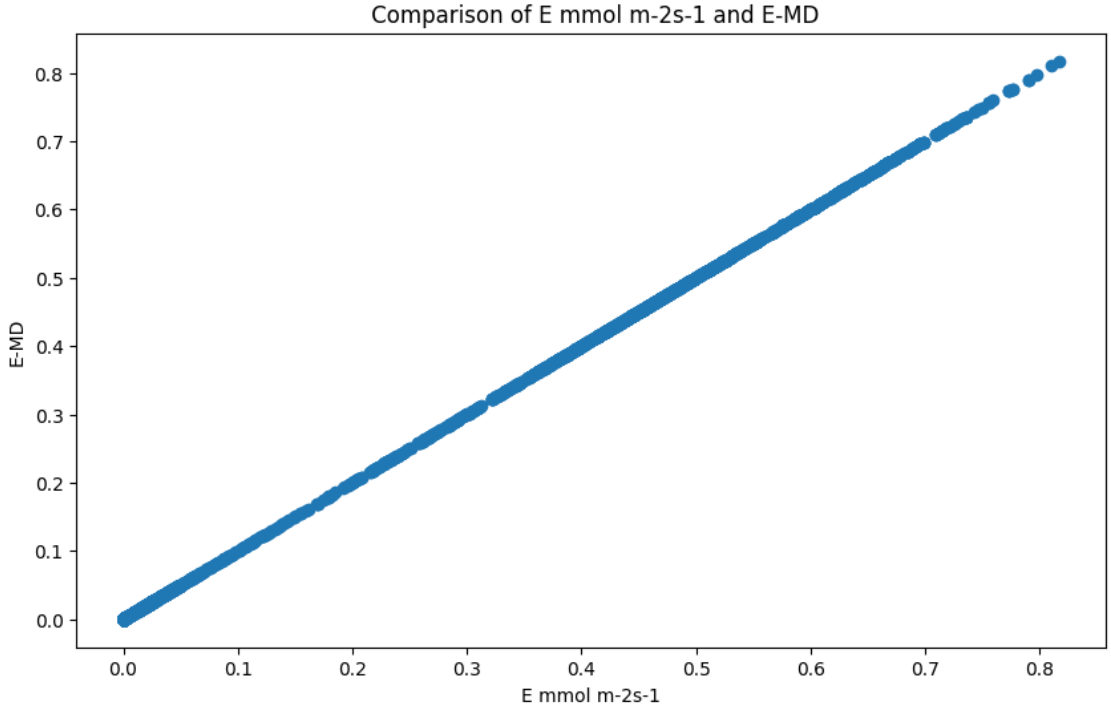
P Mpa


Comparison of P-MD between og_dt and new_dt
og_dt P Mpa
new_dt P-MD
P Mpa
Index
0
2
4
6
8
0
5000
10000
15000
20000
25000

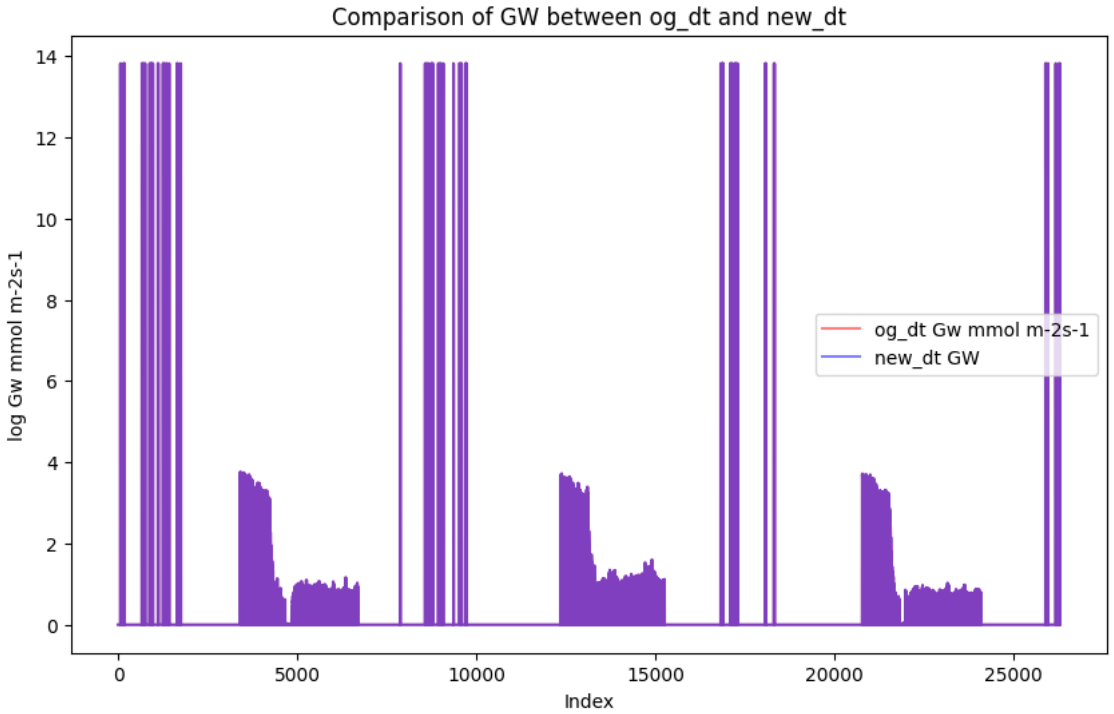

Comparison of P Mpa and P-MD
P-MD
P Mpa
0
2
4
6
8

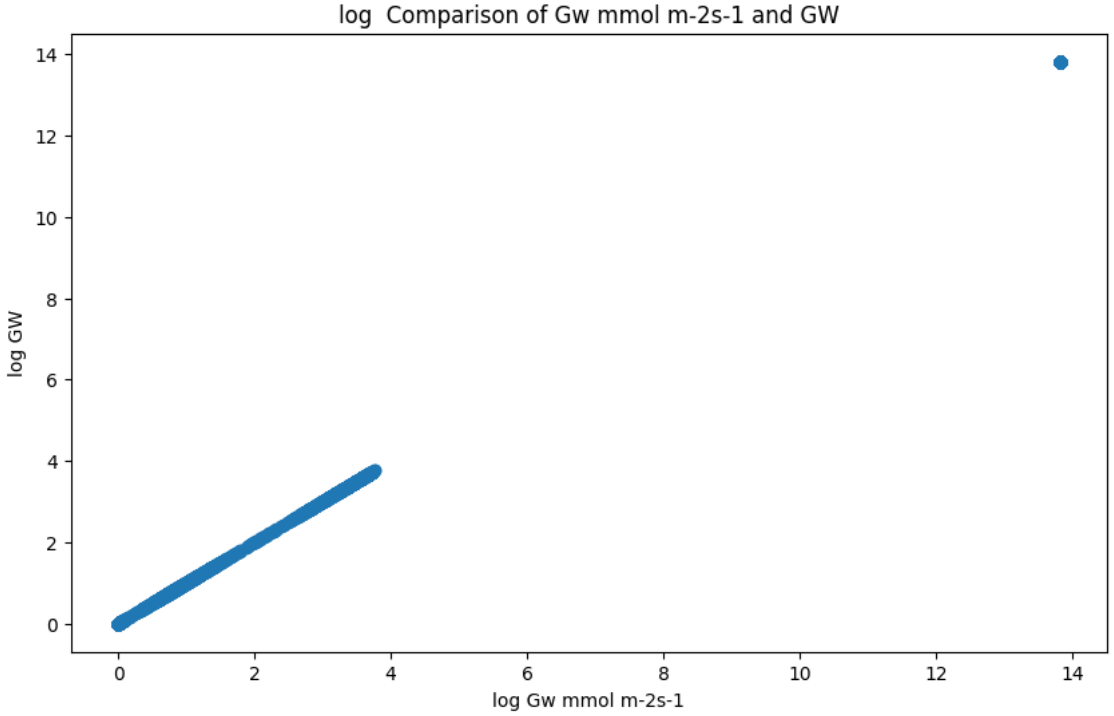
E mmol m-2s-1


Comparison of E-MD between og_dt and new_dt
og_dt E mmol m-2s-1
new_dt E-MD
E mmol m-2s-1
Index
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0
5000
10000
15000
20000
25000

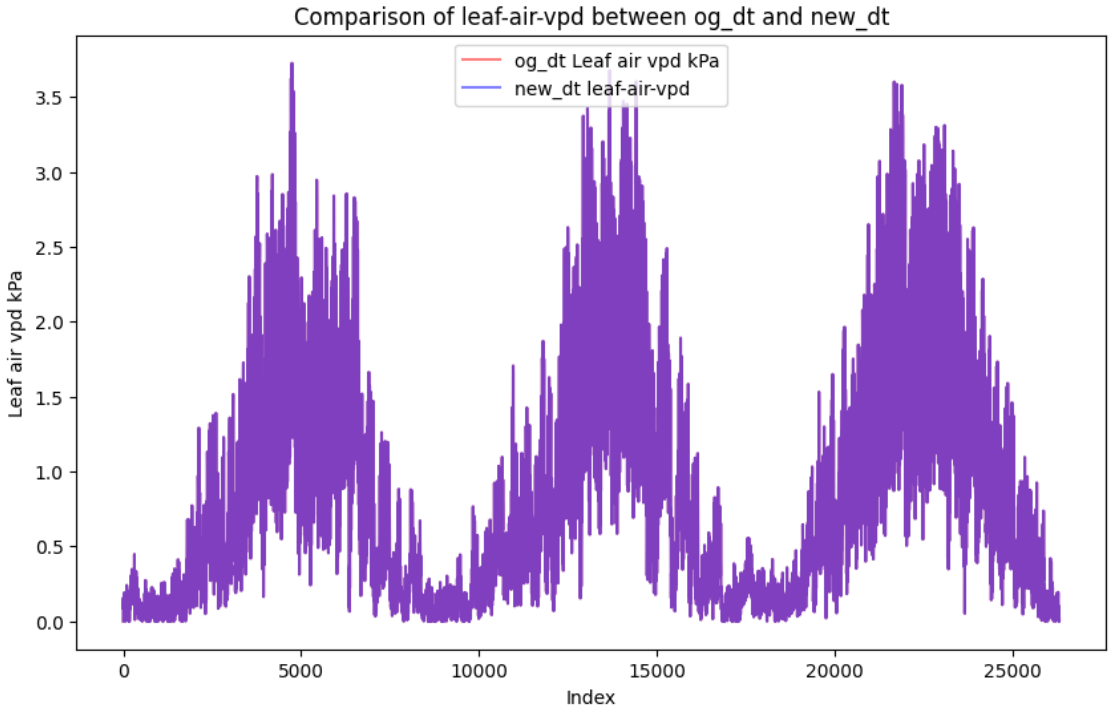

Comparison of E mmol m-2s-1 and E-MD
E-MD
E mmol m-2s-1
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8

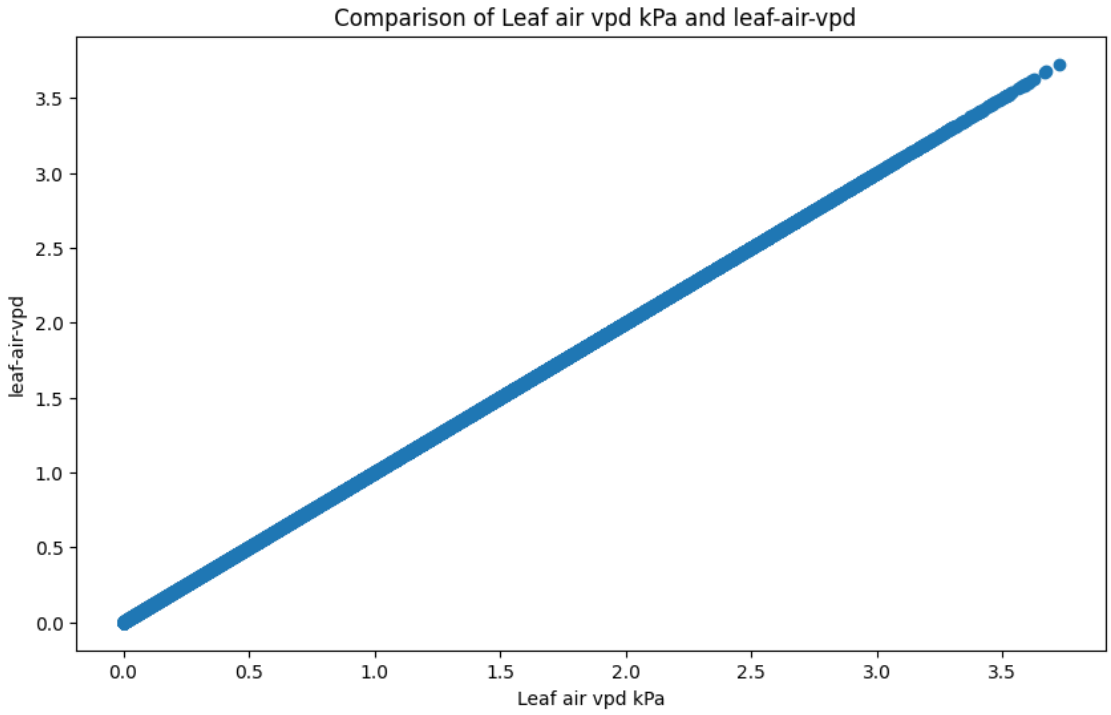
Gw mmol m-2s-1


Comparison of GW between og_dt and new_dt
log Gw mmol m-2s-1
Index
og_dt Gw mmol m-2s-1
new_dt GW
0
2
4
6
8
10
12
14
0
5000
10000
15000
20000
25000

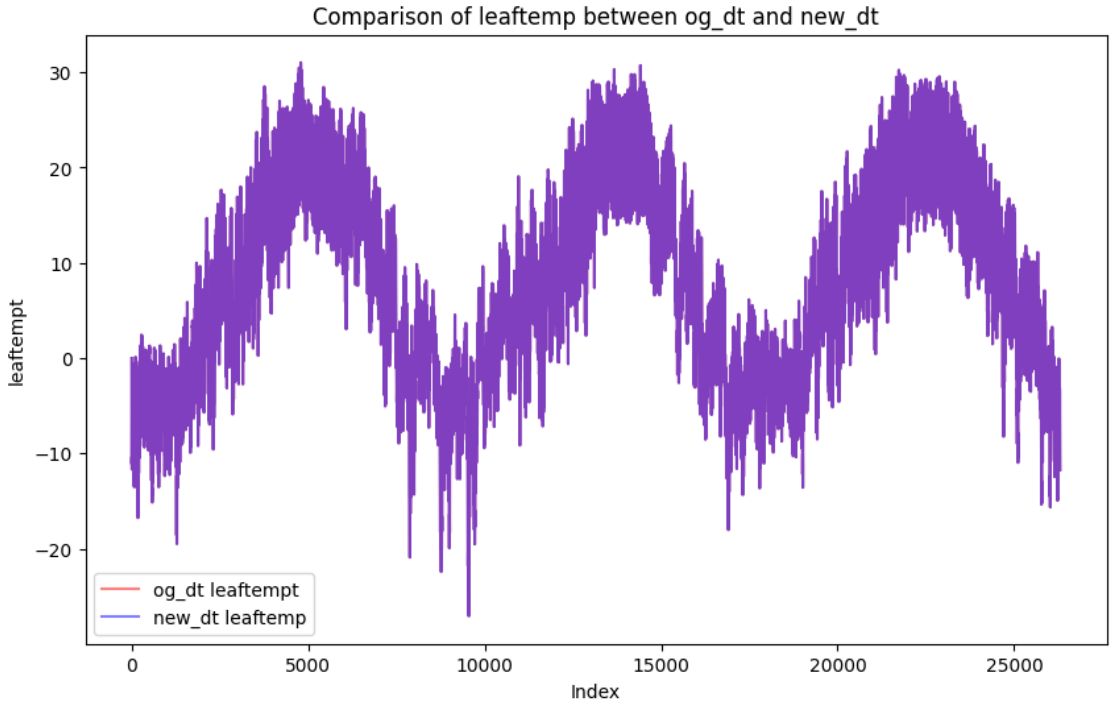

log Comparison of Gw mmol m-2s-1 and GW
log GW
log Gw mmol m-2s-1
0
2
4
6
8
10
12
14

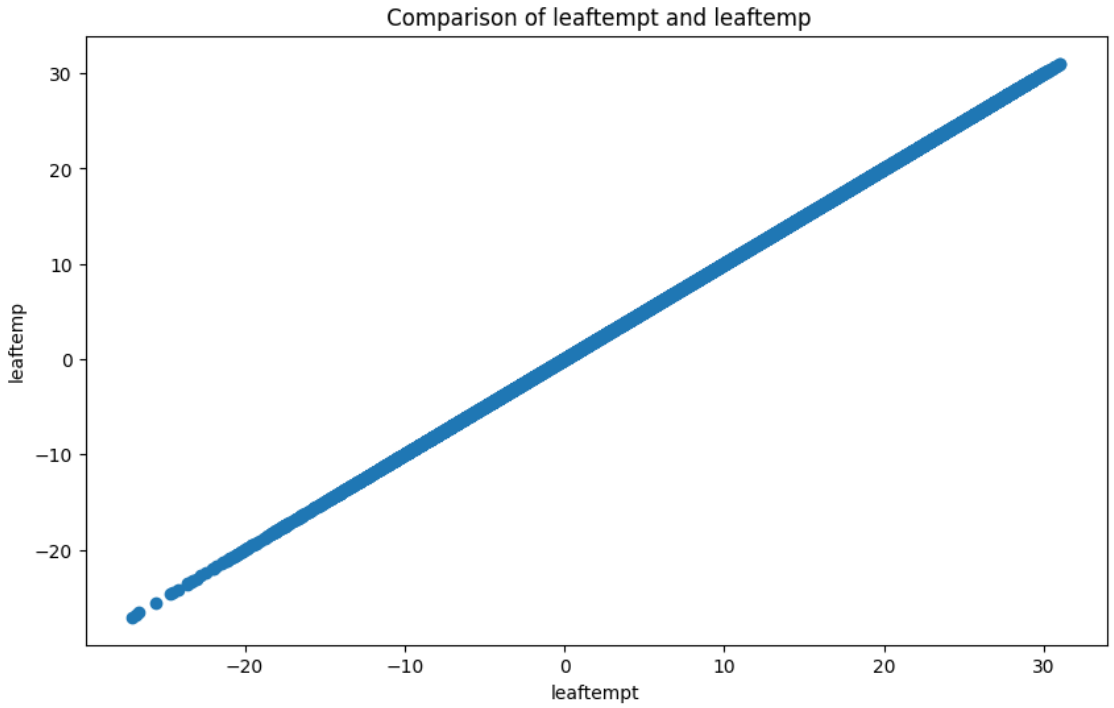
`Leaf air vpd kPa`



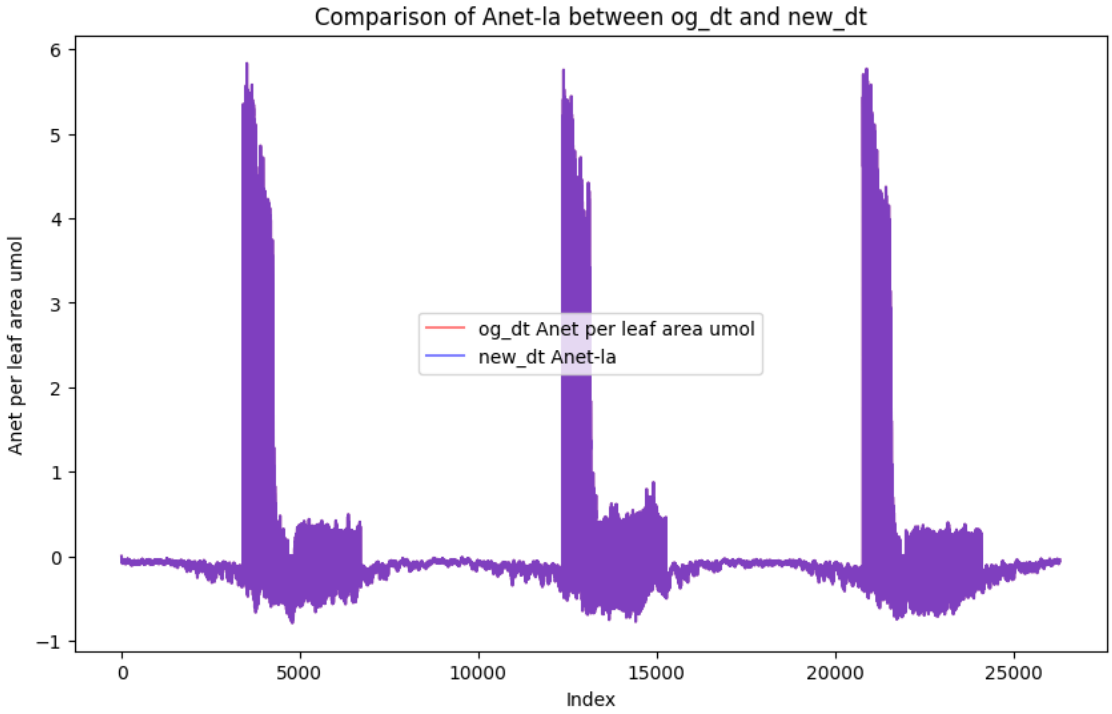


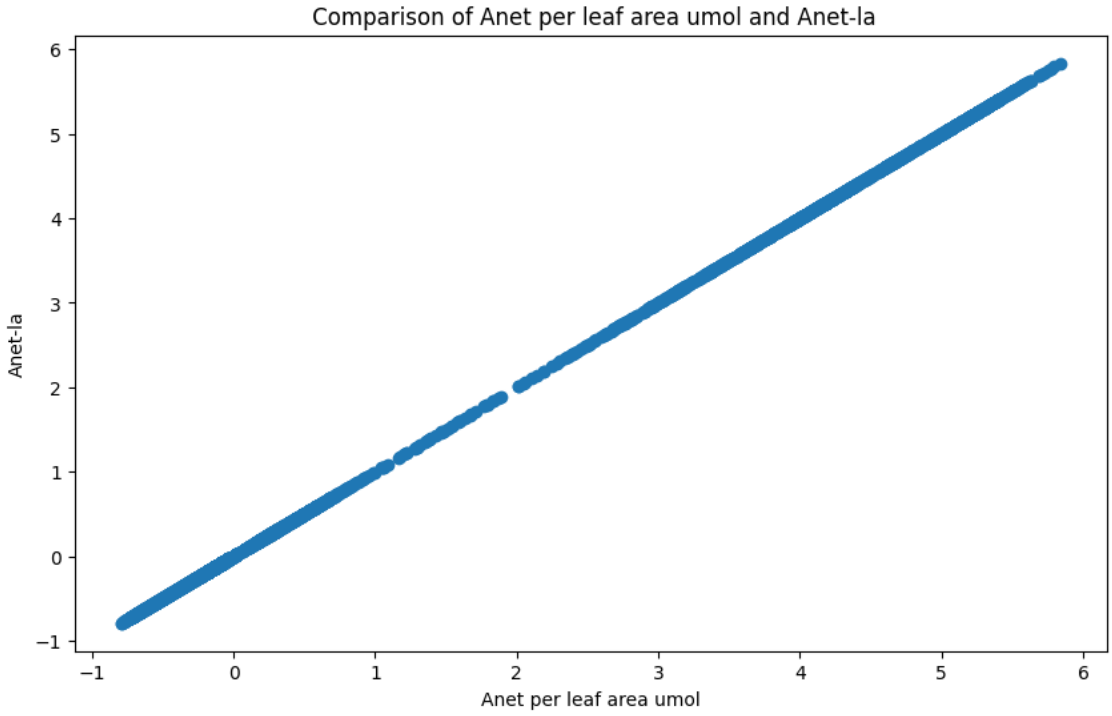
`leaftempt`


Comparison of leaftemp between og_dt and new_dt
leaftempt
Index
og_dt leaftempt
new_dt leaftemp
30
20
10
0
−10
−20
0
5000
10000
15000
20000
25000

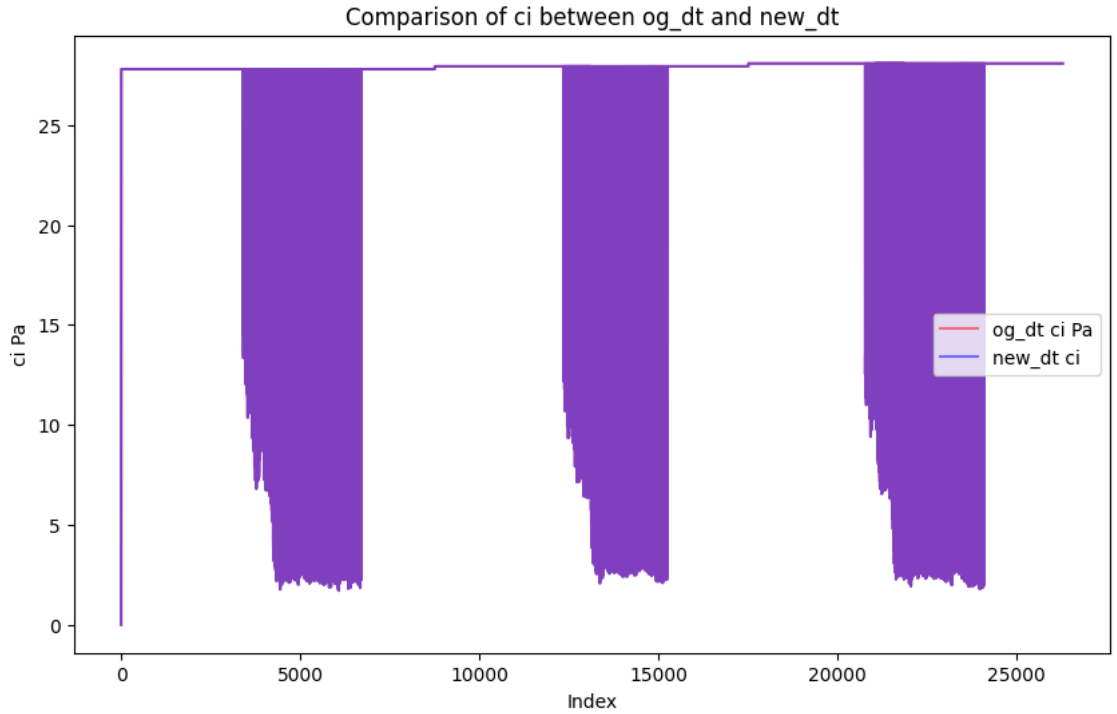

Comparison of leaftempt and leaftemp
leaftemp
leaftempt
30
20
10
0
−10
−20
−20
−10
0
10
20
30

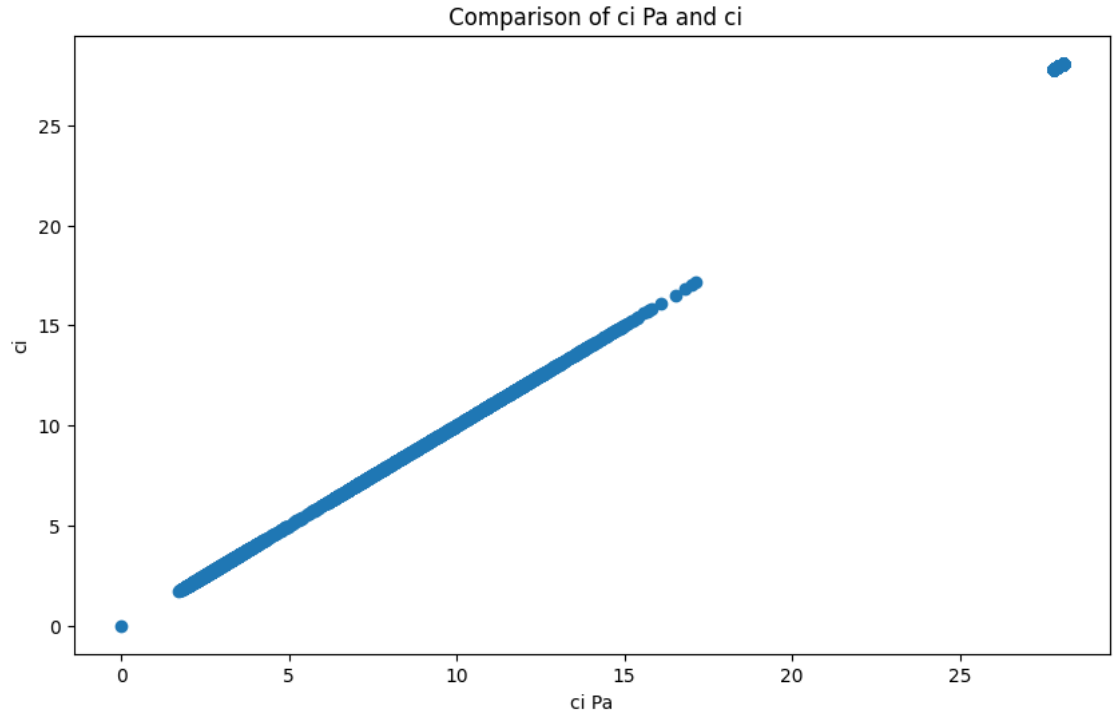
`Anet per leaf area umol`



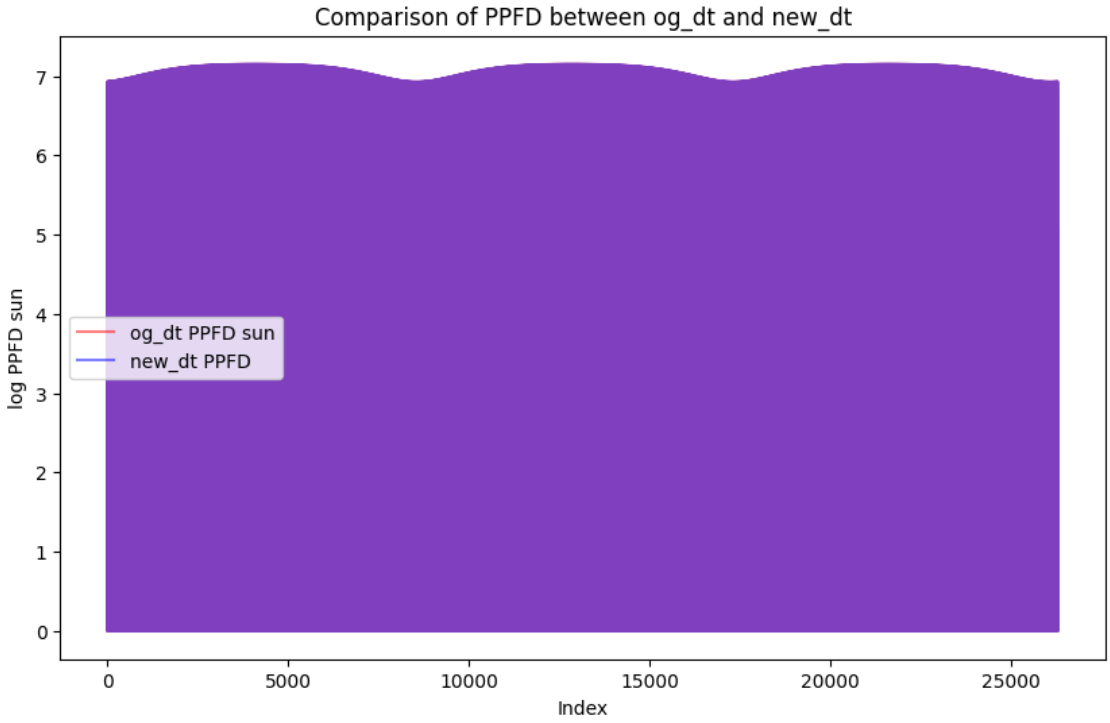


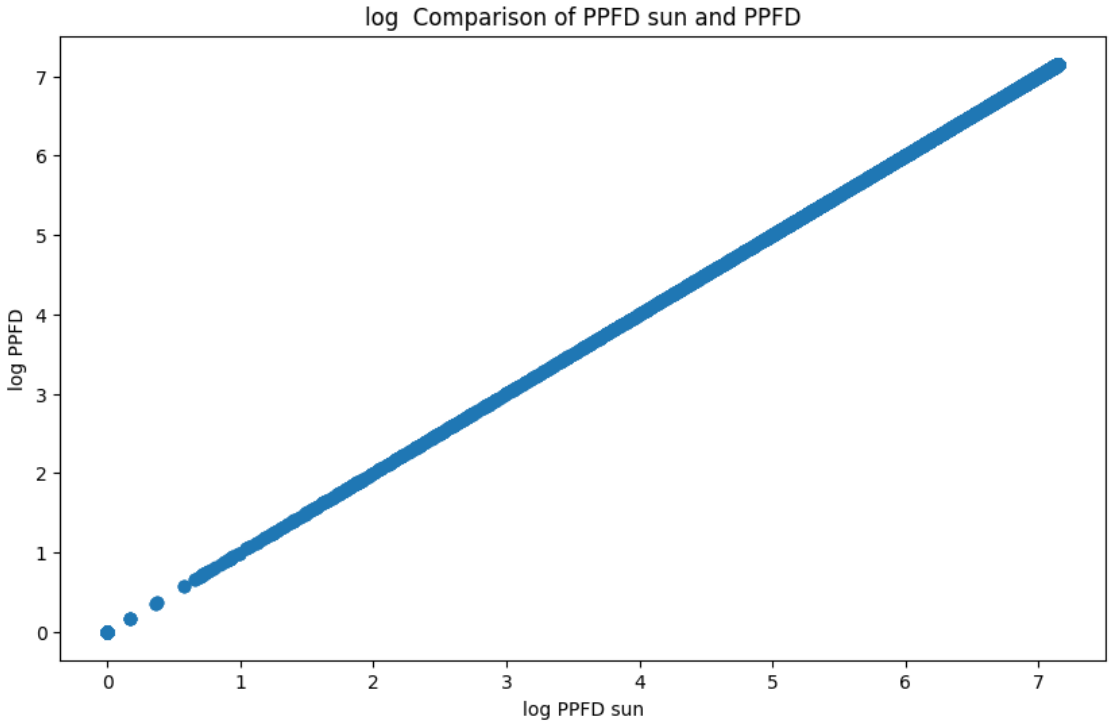
ci Pa


Comparison of ci between og_dt and new_dt
ci Pa
Index
og_dt ci Pa
new_dt ci
0
5
10
15
20
25
0
5000
10000
15000
20000
25000

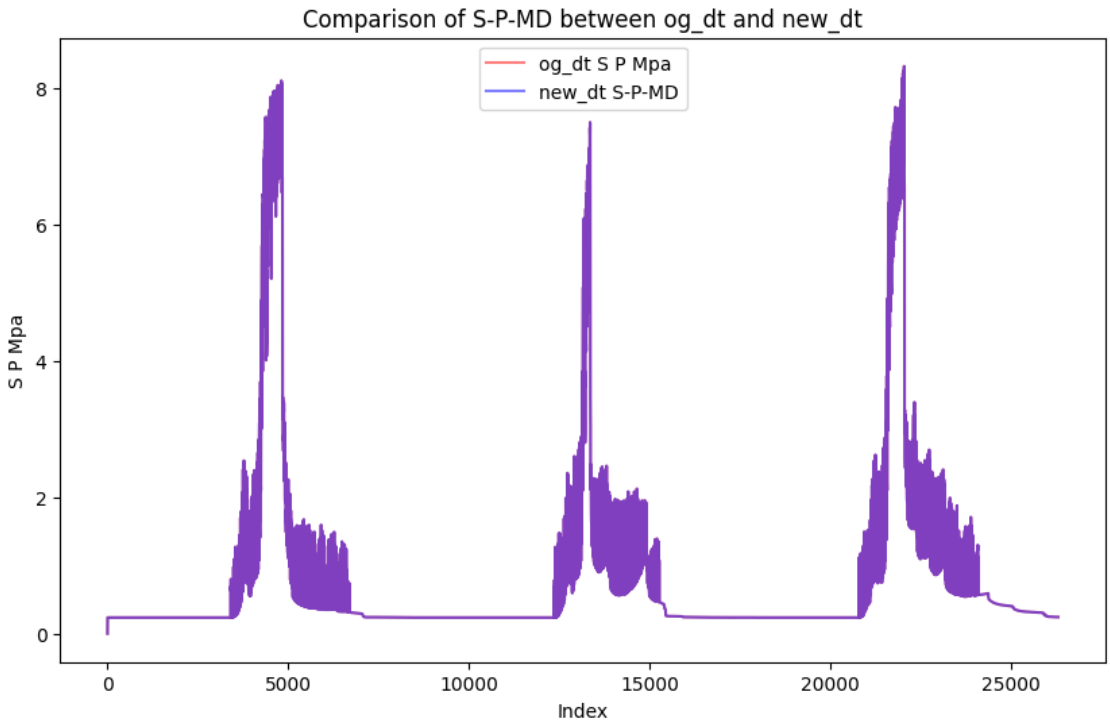

Comparison of ci Pa and ci
ci
ci Pa
0
5
10
15
20
25

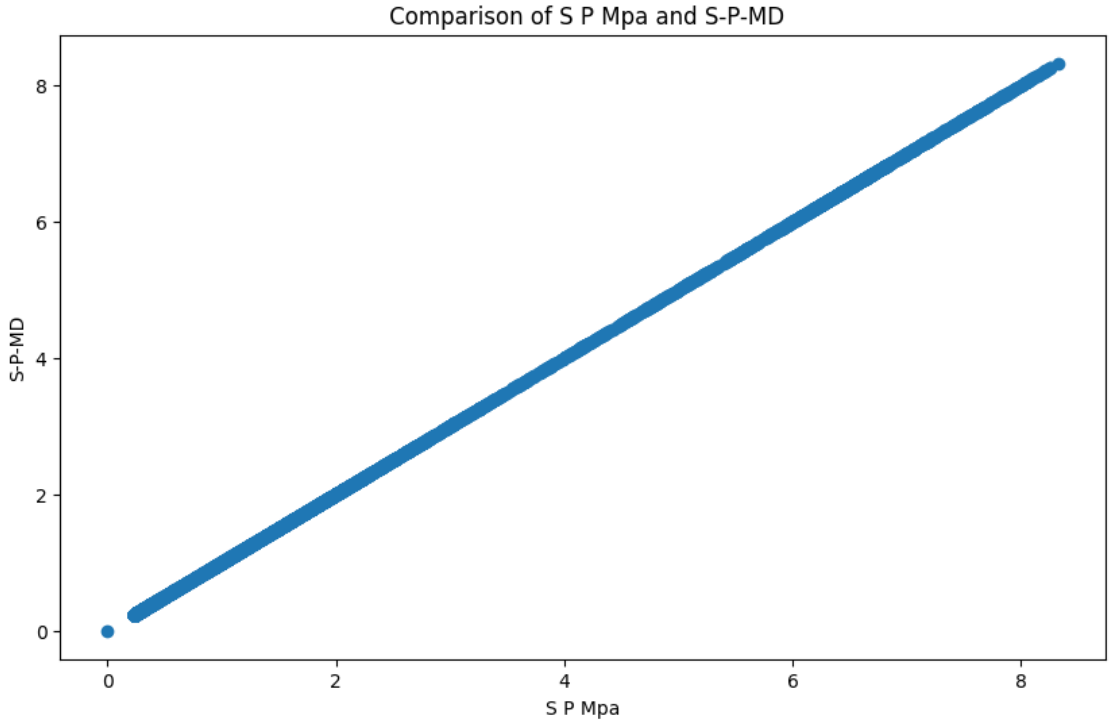
PPFD sun


Comparison of PPFD between og_dt and new_dt
log PPFD sun
Index
og_dt PPFD sun
new_dt PPFD
0
1
2
3
4
5
6
7
0
5000
10000
15000
20000
25000

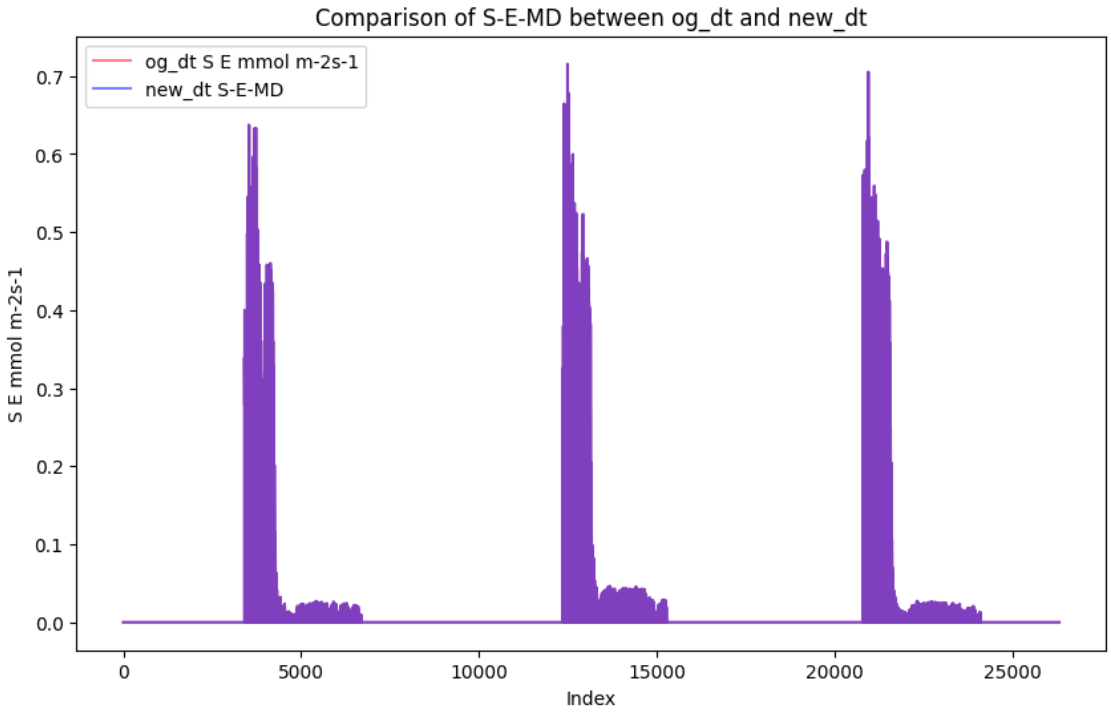

log Comparison of PPFD sun and PPFD
log PPFD
log PPFD sun
0
1
2
3
4
5
6
7

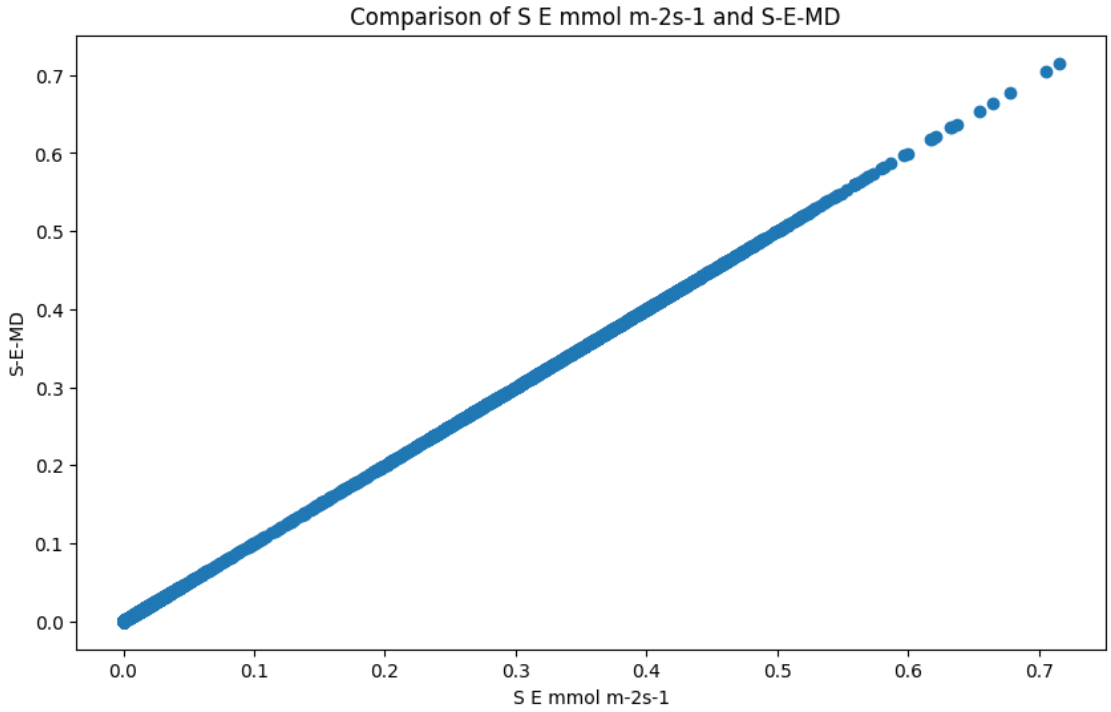
S P Mpa


Comparison of S-P-MD between og_dt and new_dt
og_dt S P Mpa
new_dt S-P-MD
S P Mpa
Index
0
2
4
6
8
0
5000
10000
15000
20000
25000

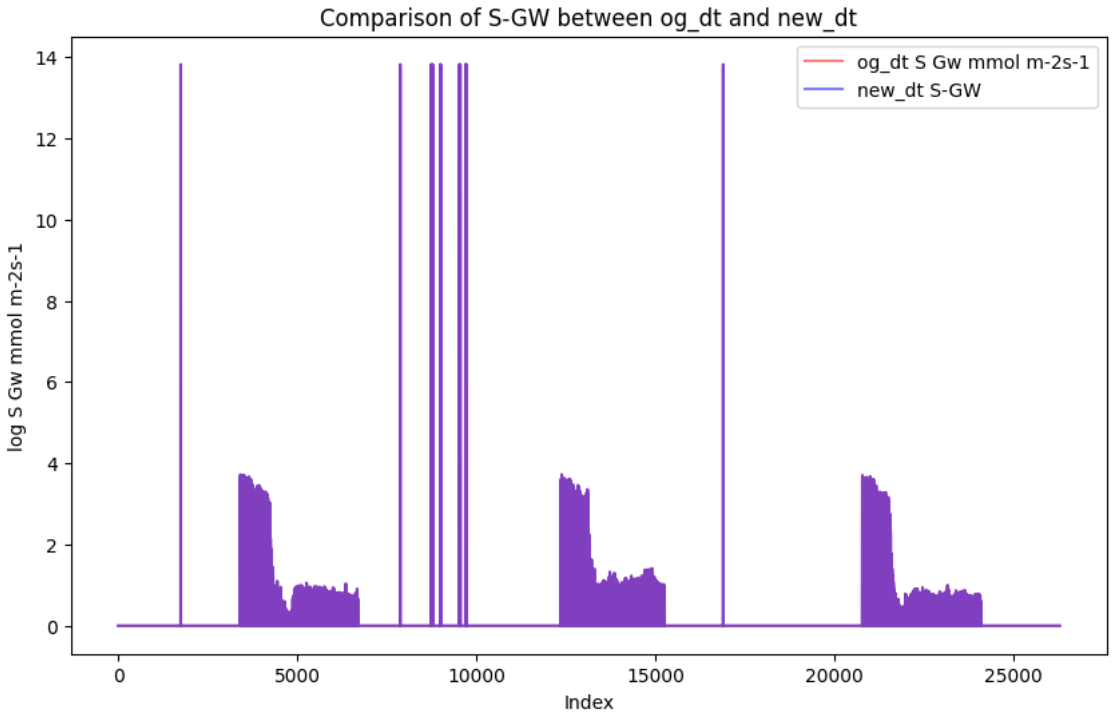

Comparison of S P Mpa and S-P-MD
S-P-MD
S P Mpa
0
2
4
6
8

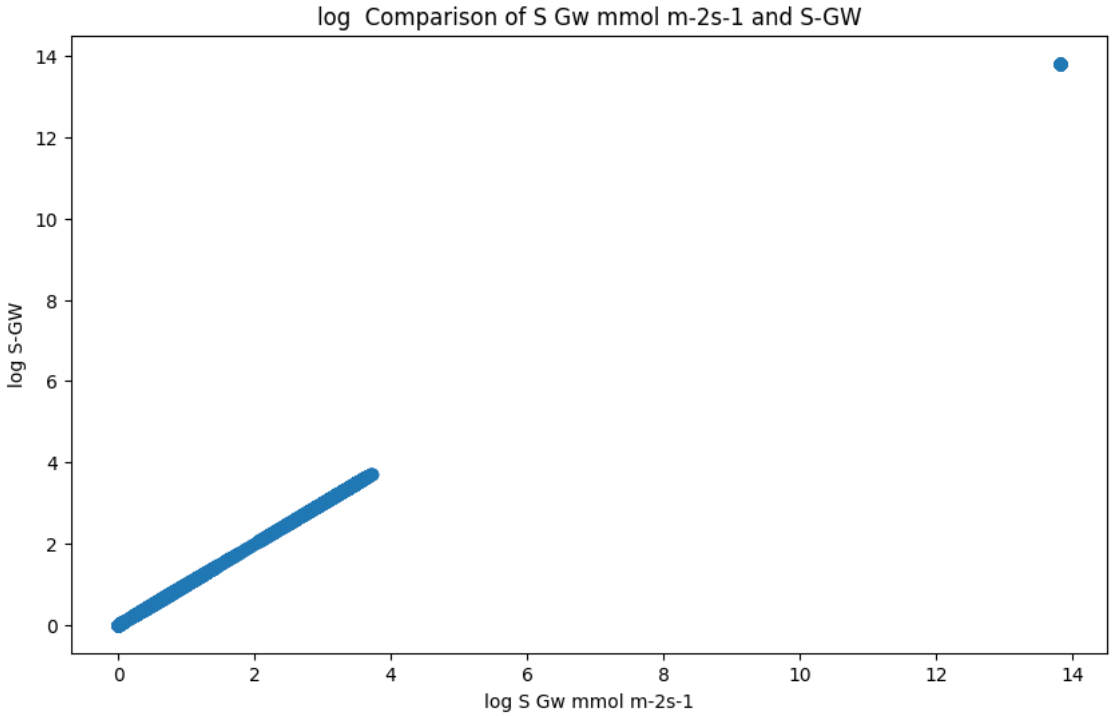
S E mmol m-2s-1


Comparison of S-E-MD between og_dt and new_dt
og_dt S E mmol m-2s-1
new_dt S-E-MD
S E mmol m-2s-1
Index
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0
5000
10000
15000
20000
25000

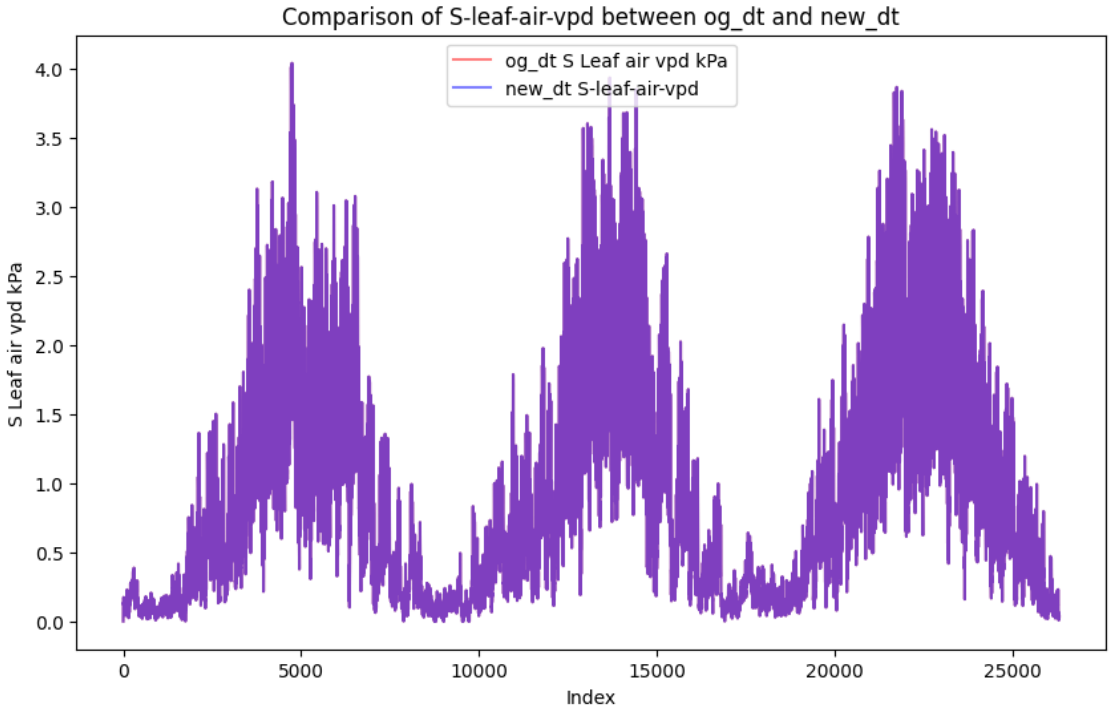


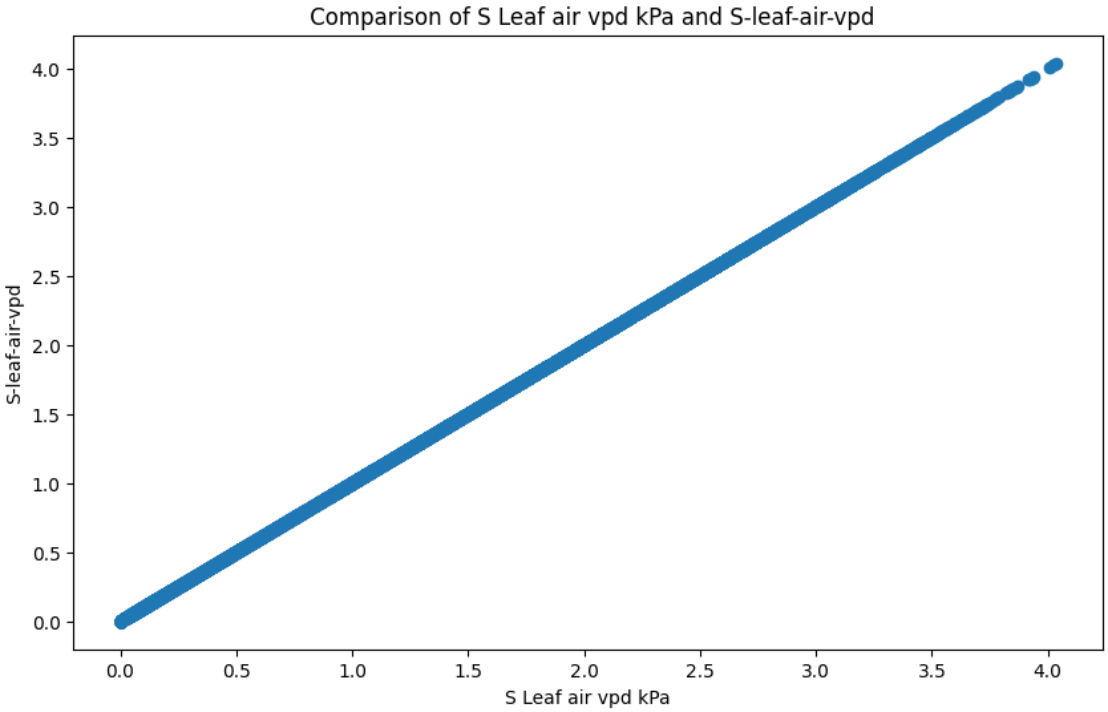
S Gw mmol m-2s-1



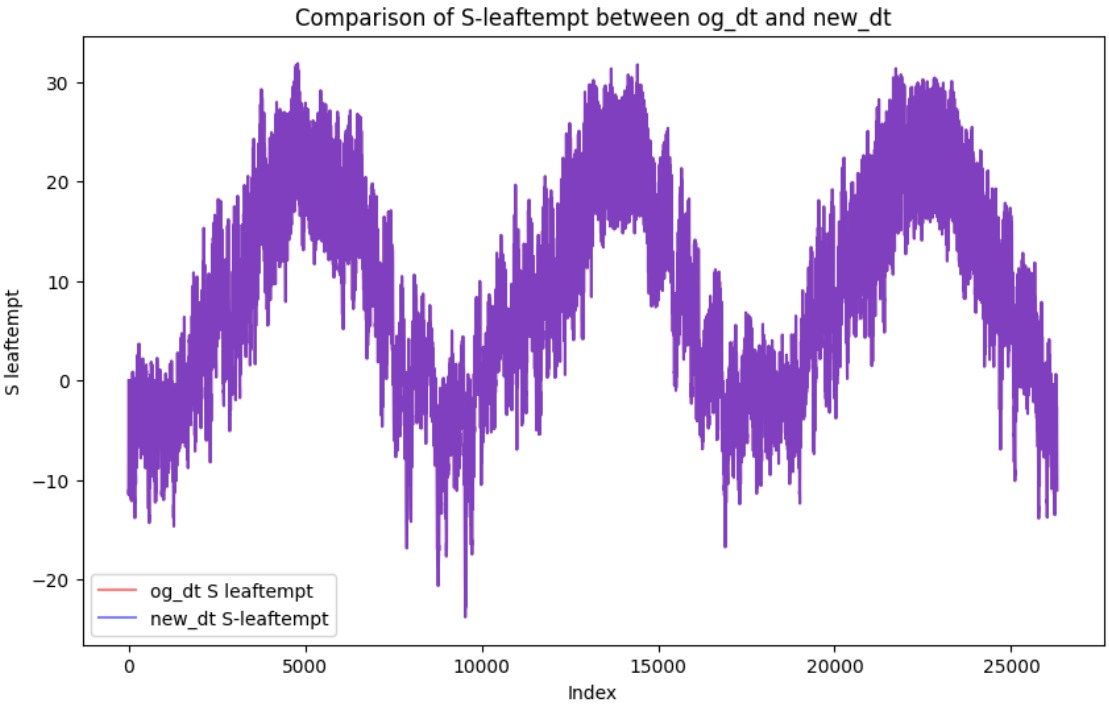


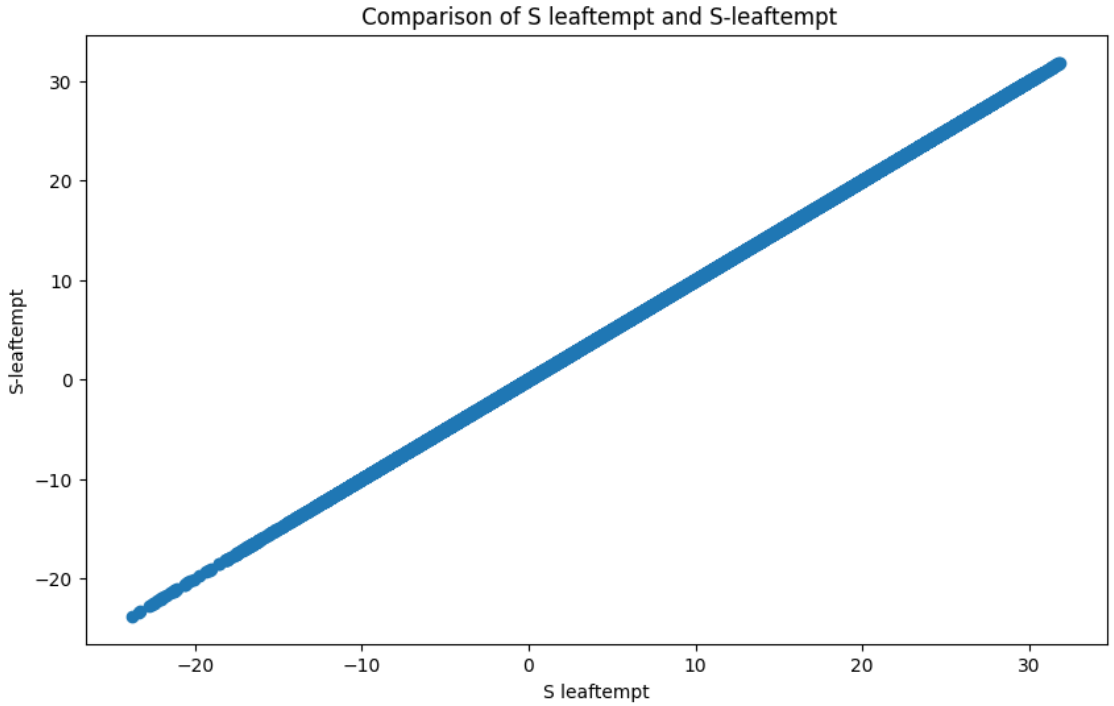
S Leaf air vpd kPa



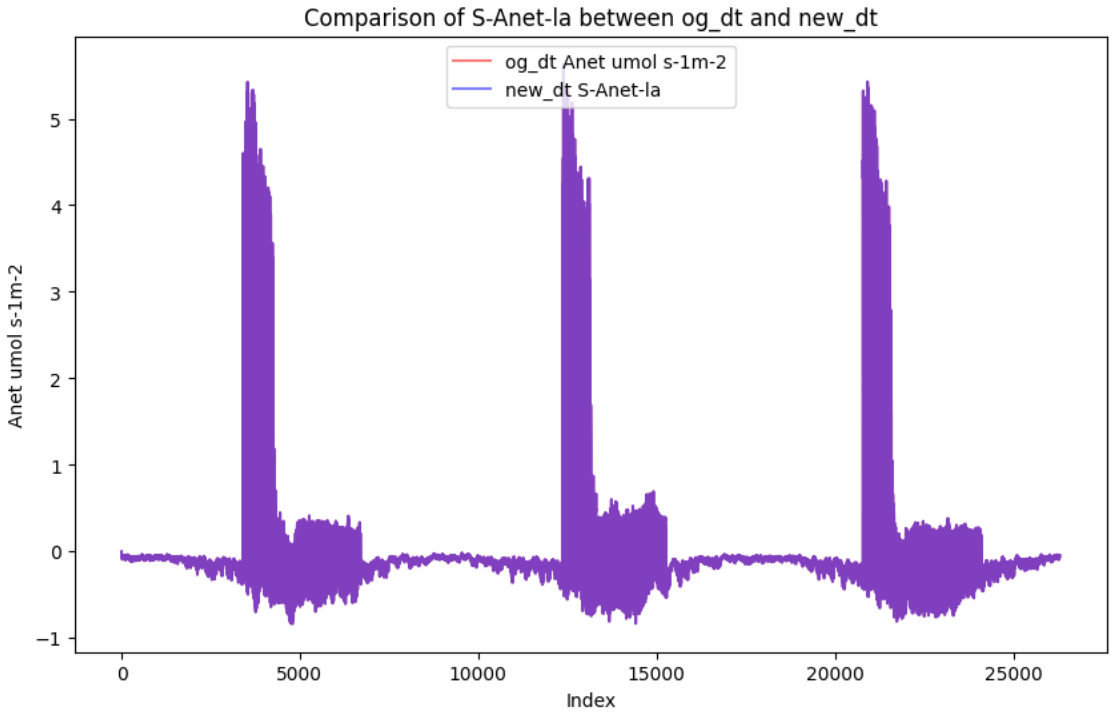

Comparison of S Leaf air vpd kPa and S-leaf-air-vpd
S-leaf-air-vpd
S Leaf air vpd kPa
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0

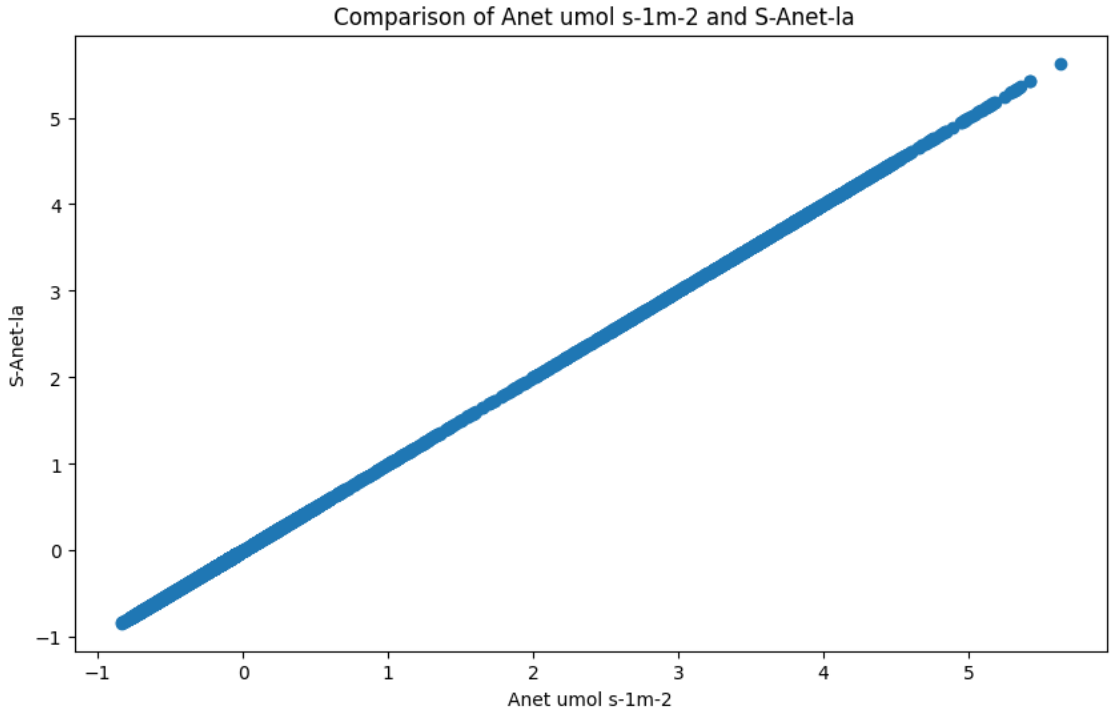
`S leaftempt`


Comparison of S-leaftempt between og_dt and new_dt
S leaftempt
Index
og_dt S leaftempt
new_dt S-leaftempt
30
20
10
0
−10
−20
0
5000
10000
15000
20000
25000

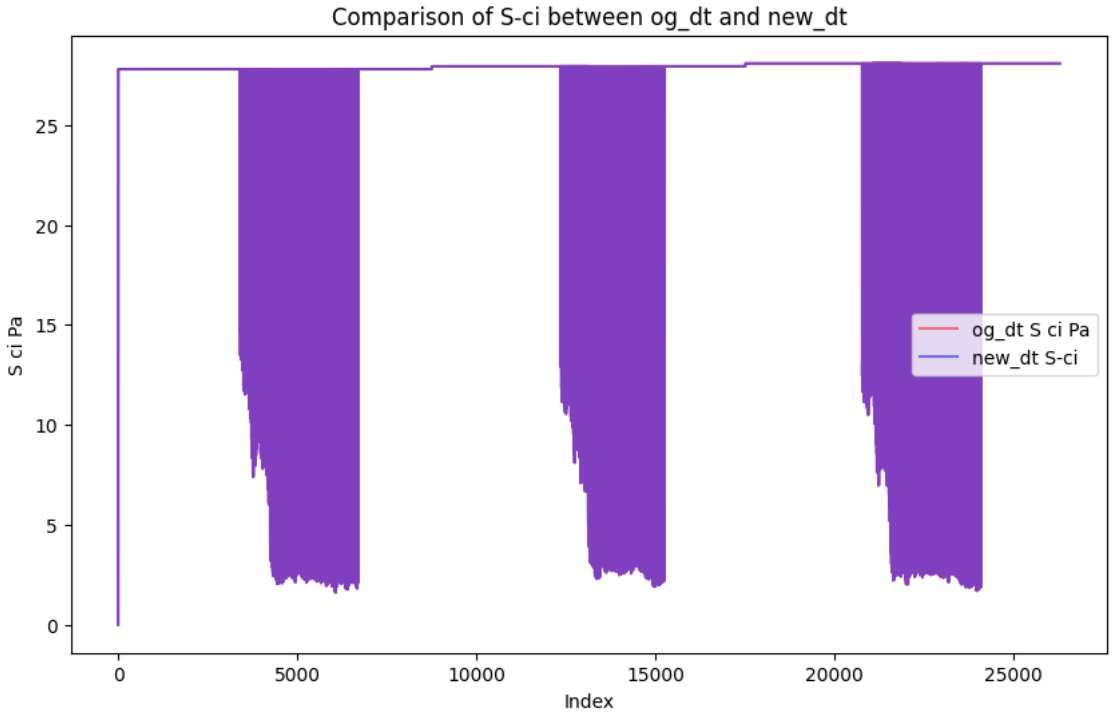


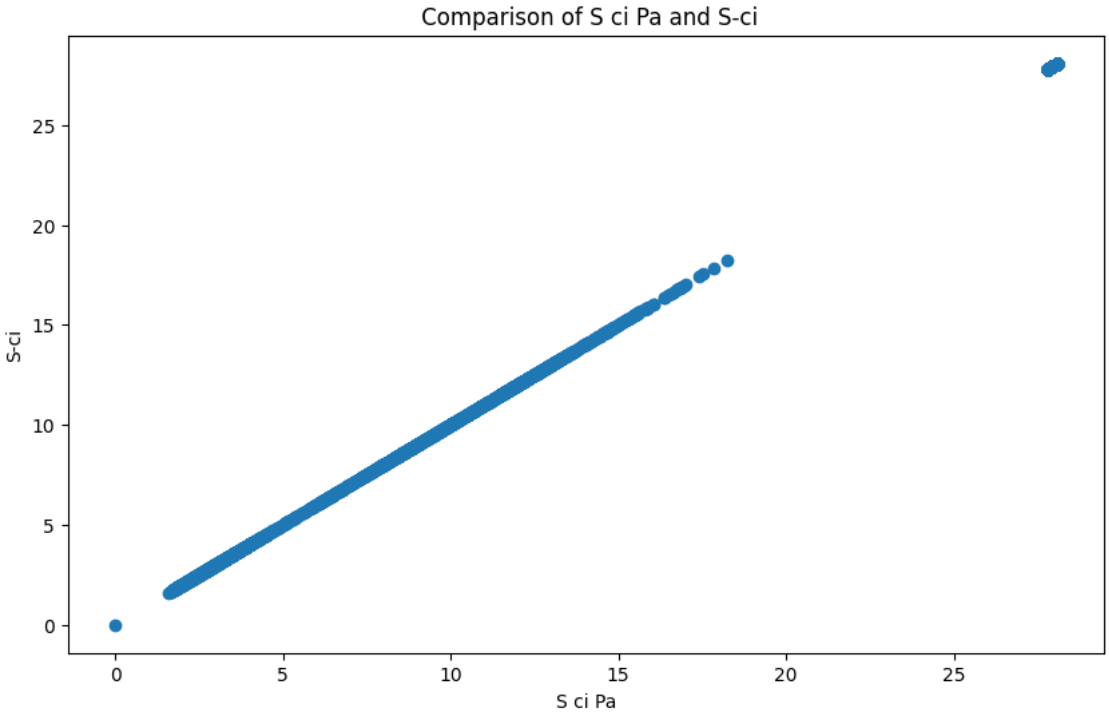
Anet umol s-1m-2



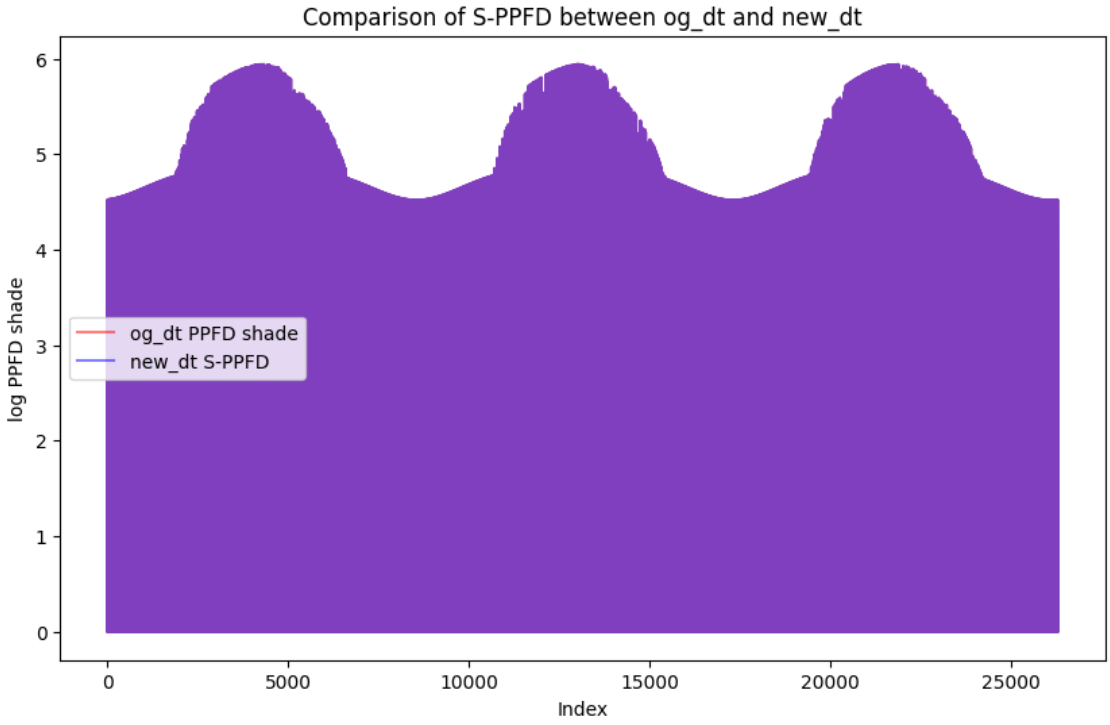

Comparison of Anet umol s-1m-2 and S-Anet-la
S-Anet-la
Anet umol s-1m-2
5
4
3
2
1
0
−1
−1
0
1
2
3
4
5

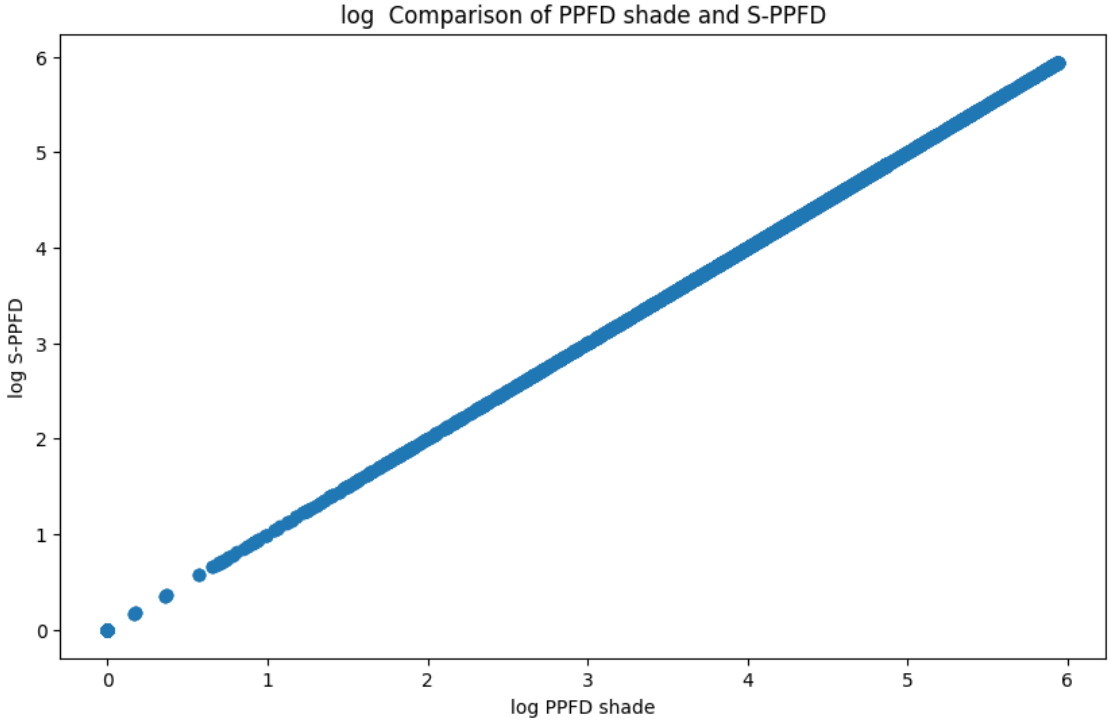
S ci Pa


Comparison of S-ci between og_dt and new_dt
S ci Pa
Index
og_dt S ci Pa
new_dt S-ci
25
20
15
10
5
0
0
5000
10000
15000
20000
25000

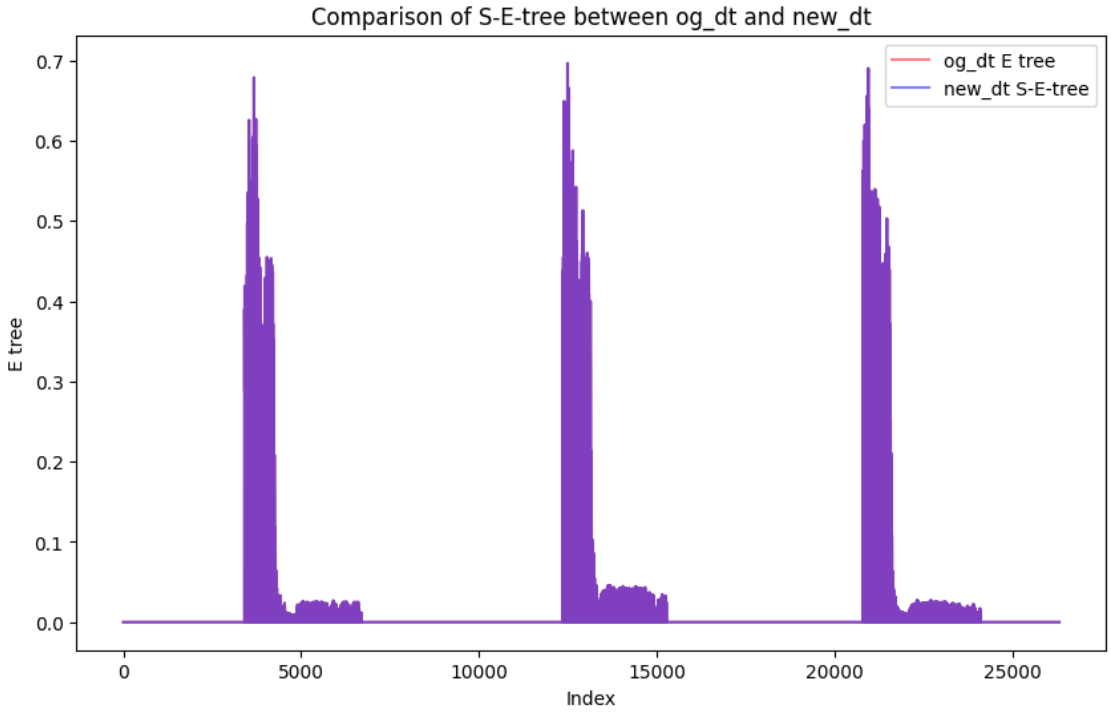


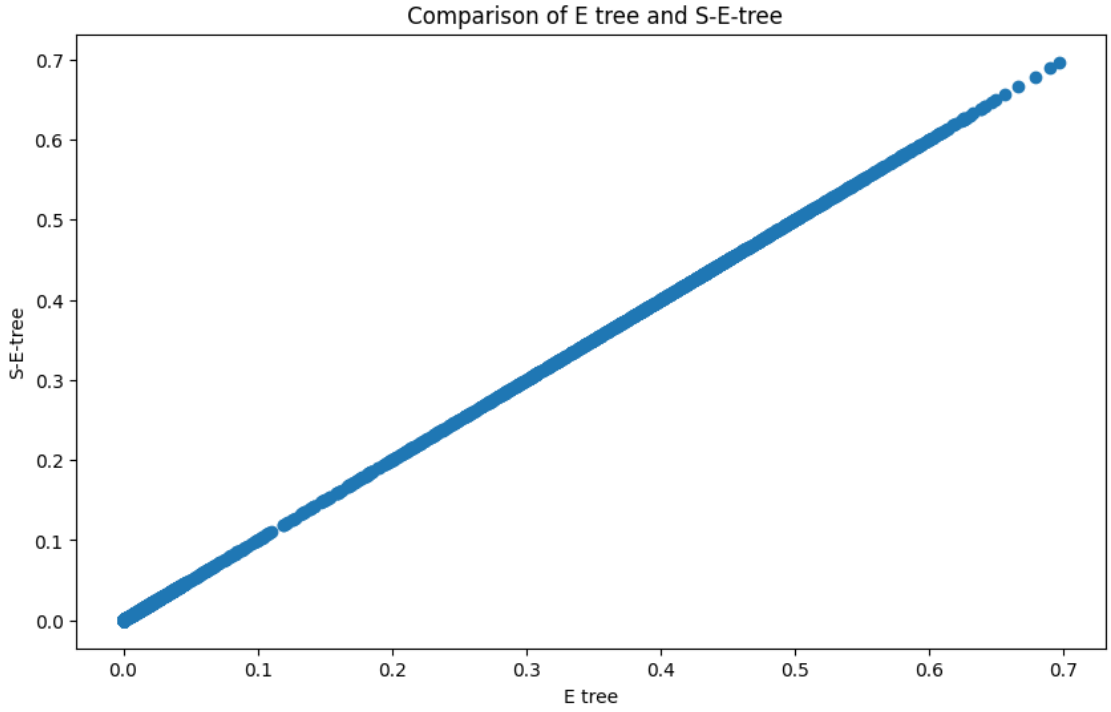
PPFD shade


Comparison of S-PPFD between og_dt and new_dt
log PPFD shade
Index
og_dt PPFD shade
new_dt S-PPFD
0
1
2
3
4
5
6
0
5000
10000
15000
20000
25000

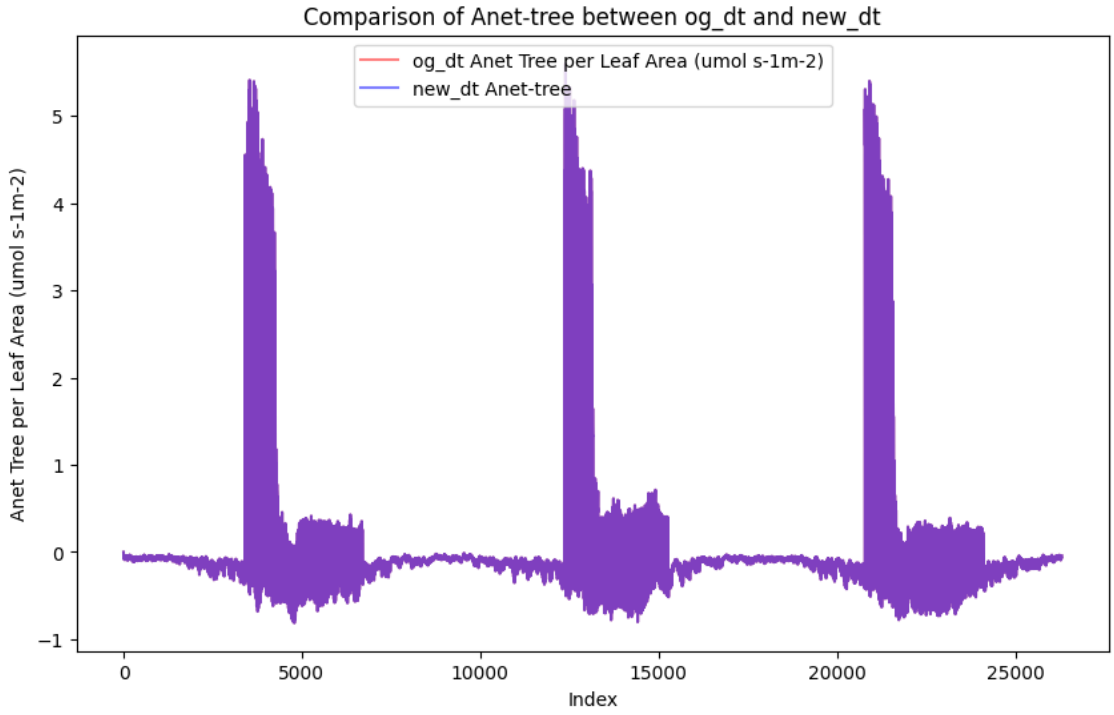

log Comparison of PPFD shade and S-PPFD
log S-PPFD
log PPFD shade
0
1
2
3
4
5
6

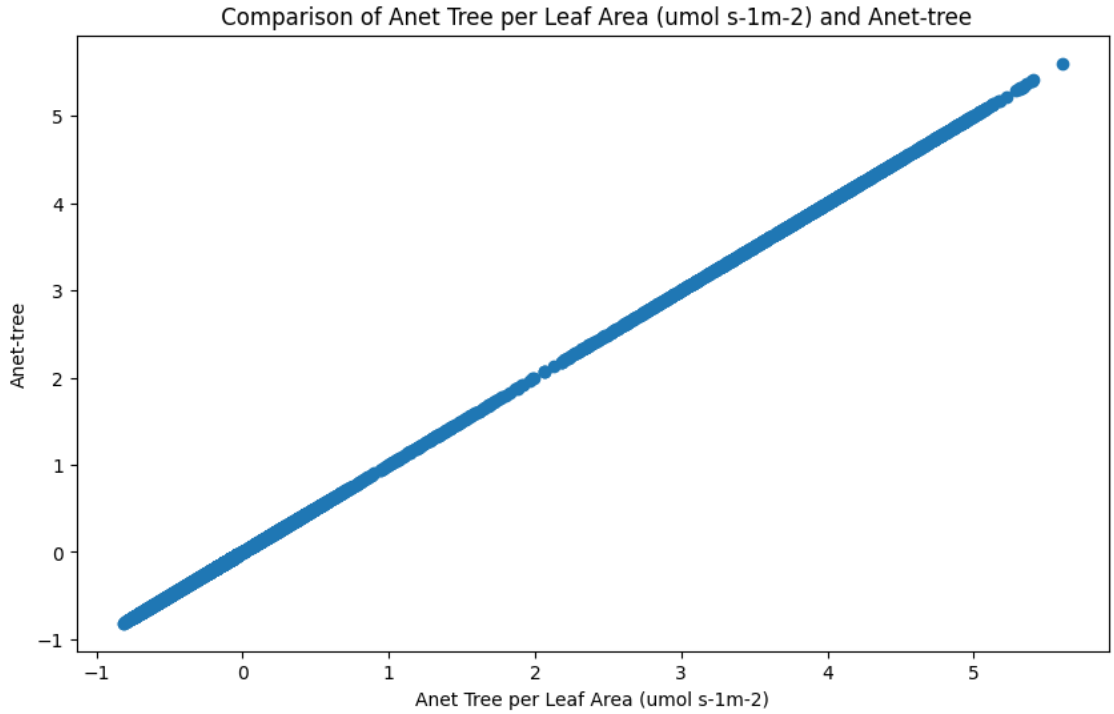
E tree


Comparison of S-E-tree between og_dt and new_dt
og_dt E tree
new_dt S-E-tree
E tree
Index
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0
5000
10000
15000
20000
25000

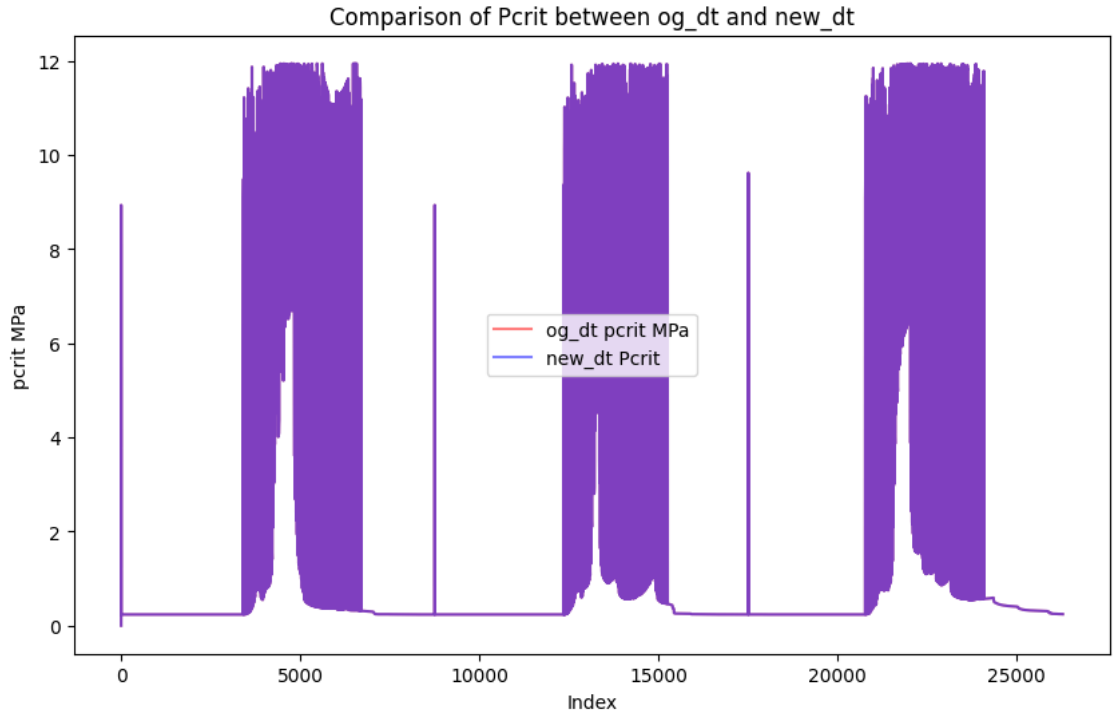

Comparison of E tree and S-E-tree
S-E-tree
E tree
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7

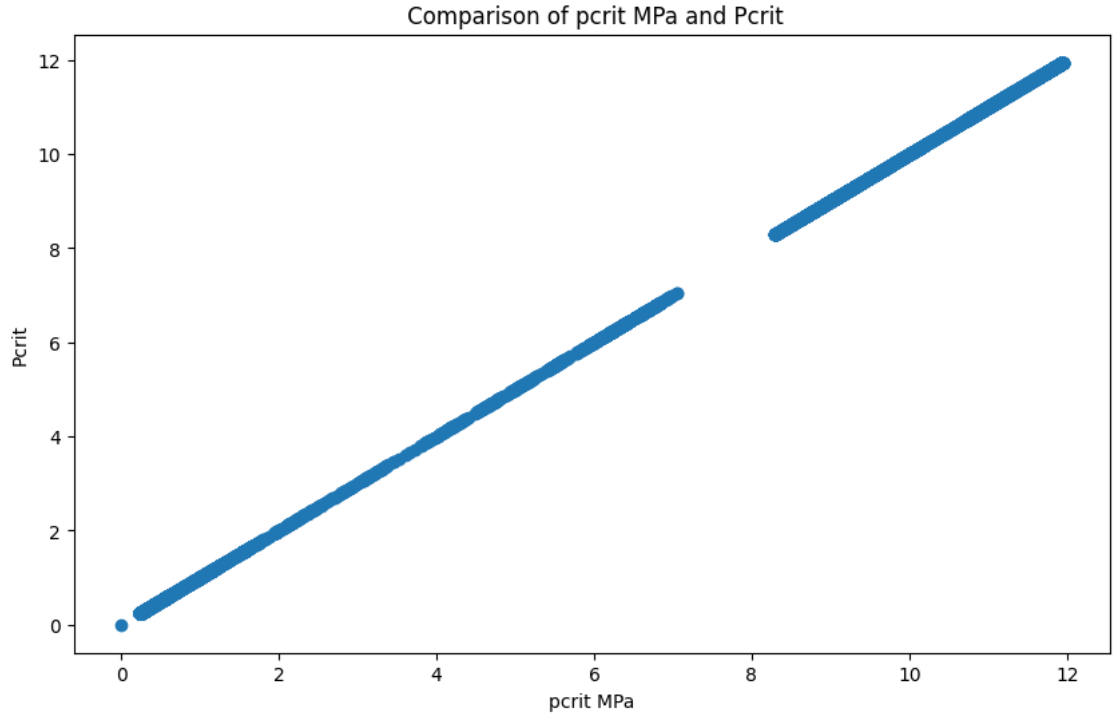
Anet Tree per Leaf Area (umol s-1m-2)



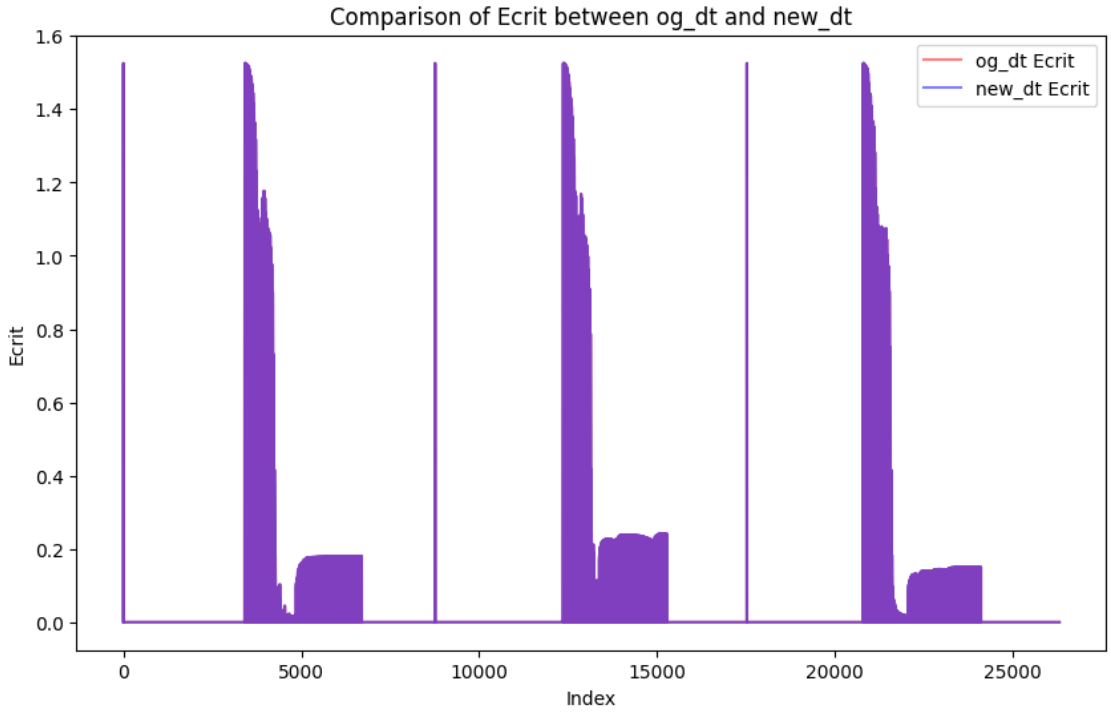


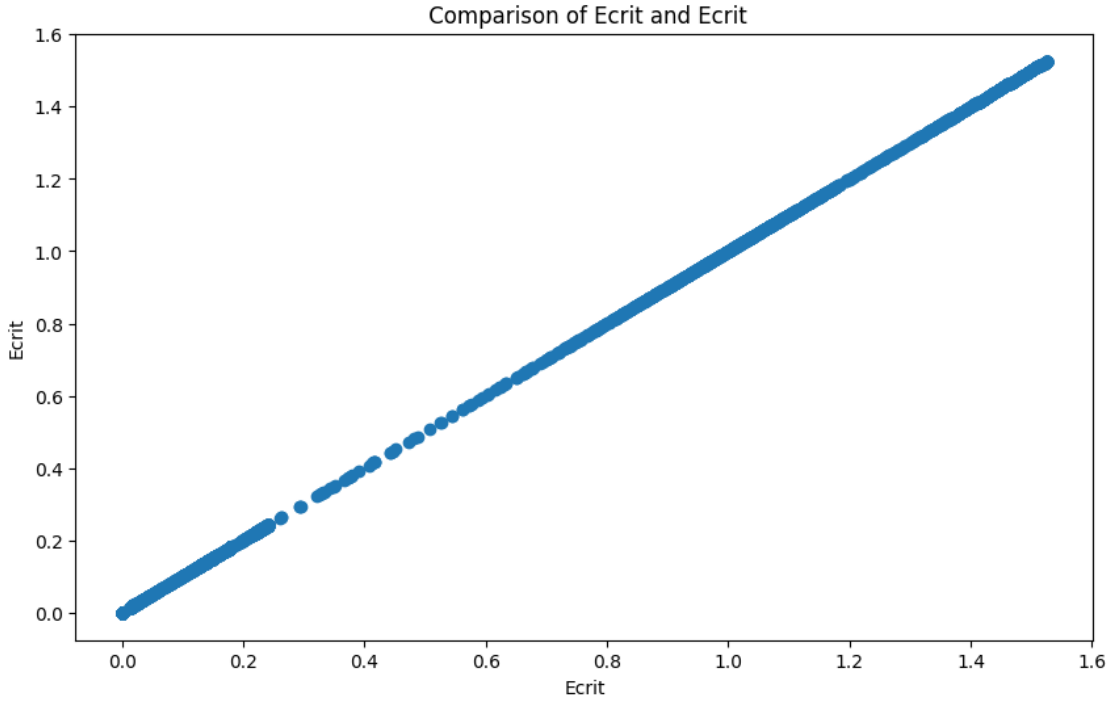
pcrit MPa


Comparison of Pcrit between og_dt and new_dt
pcrit MPa
Index
og_dt pcrit MPa
new_dt Pcrit
0
2
4
6
8
10
12
0
5000
10000
15000
20000
25000

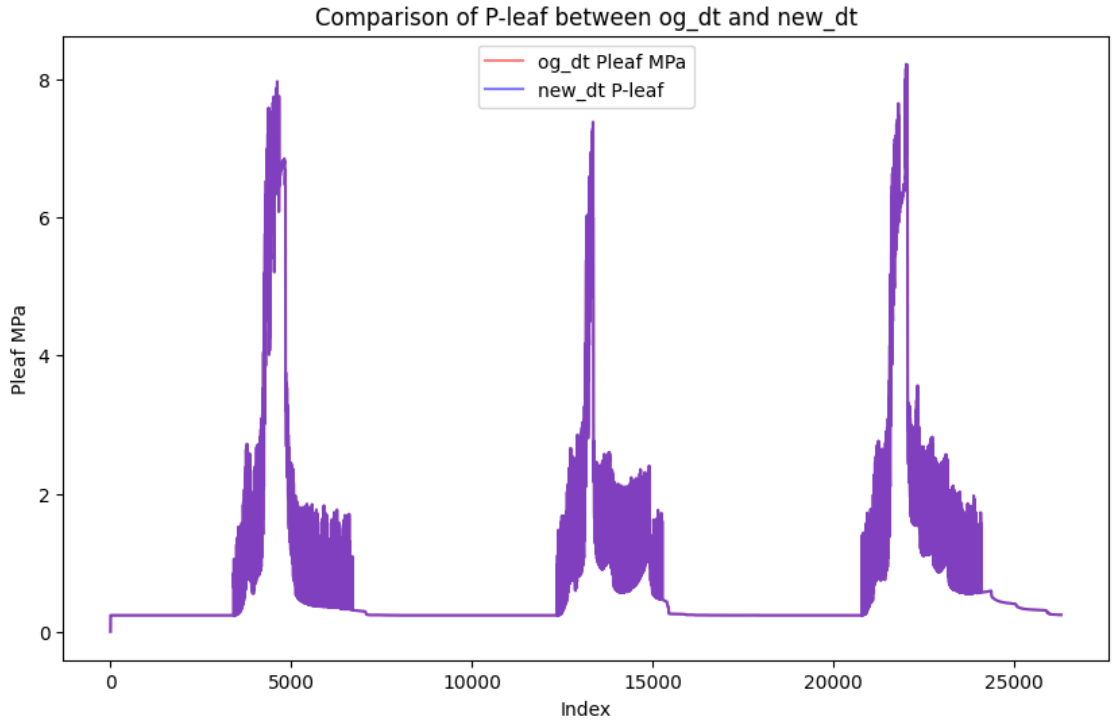

Comparison of pcrit MPa and Pcrit
Pcrit
pcrit MPa
0
2
4
6
8
10
12

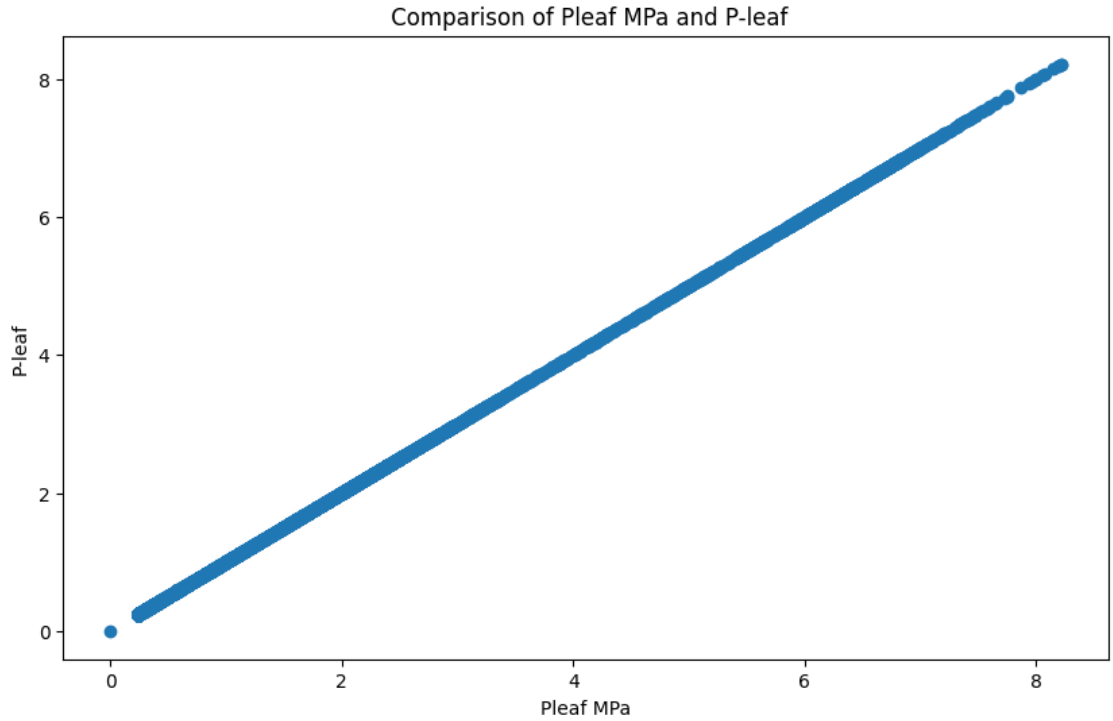
`Ecrit`


Comparison of Ecrit between og_dt and new_dt
og_dt Ecrit
new_dt Ecrit
Ecrit
Index
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
0
5000
10000
15000
20000
25000

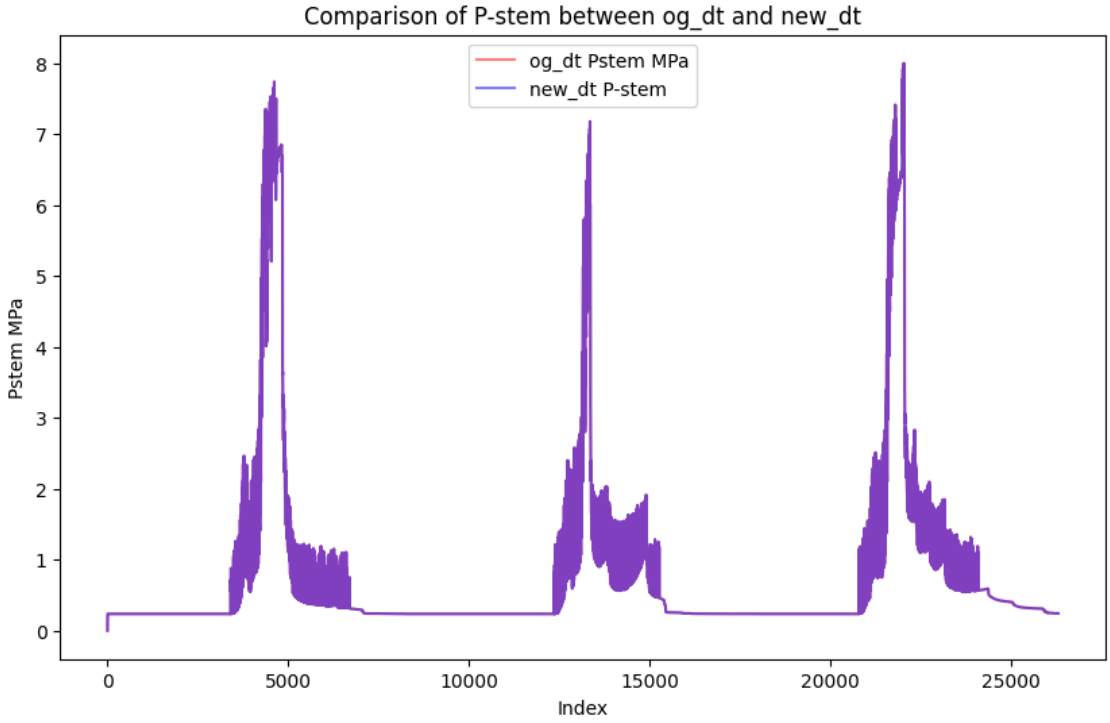

Comparison of Ecrit and Ecrit
Ecrit
Ecrit
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6

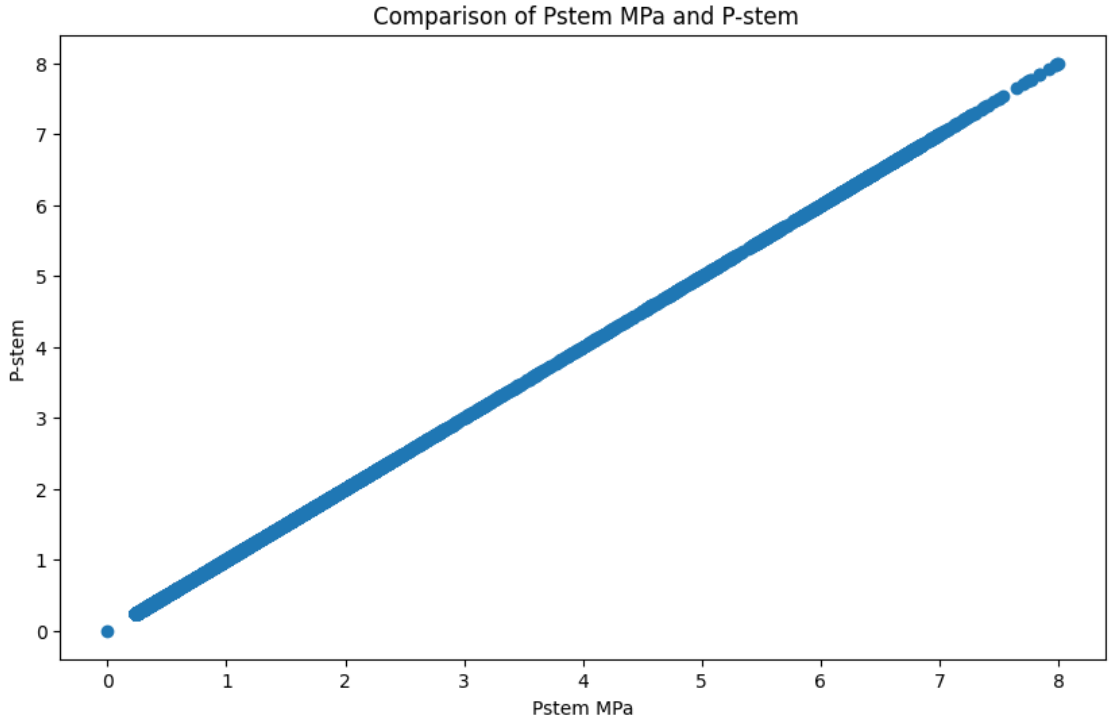
Pleaf MPa


Comparison of P-leaf between og_dt and new_dt
og_dt Pleaf MPa
new_dt P-leaf
Pleaf MPa
Index
0
2
4
6
8
0
5000
10000
15000
20000
25000

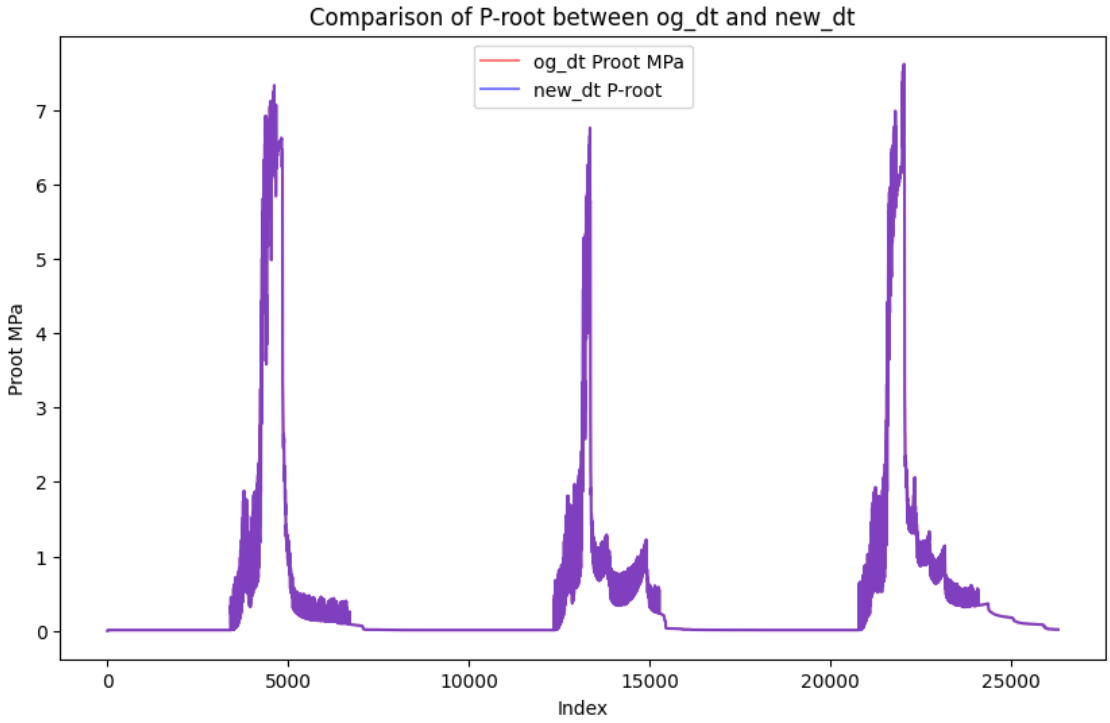

Comparison of Pleaf MPa and P-leaf
P-leaf
Pleaf MPa
0
2
4
6
8

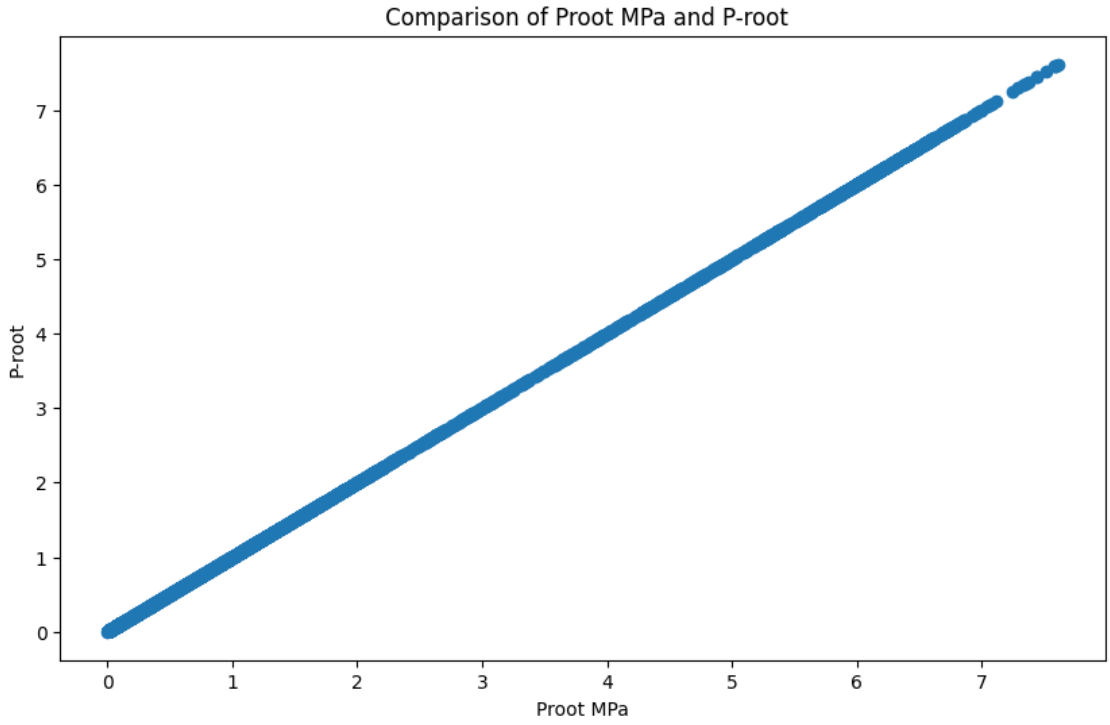
Pstem MPa


Comparison of P-stem between og_dt and new_dt
og_dt Pstem MPa
new_dt P-stem
Pstem MPa
Index
0
1
2
3
4
5
6
7
8
0
5000
10000
15000
20000
25000

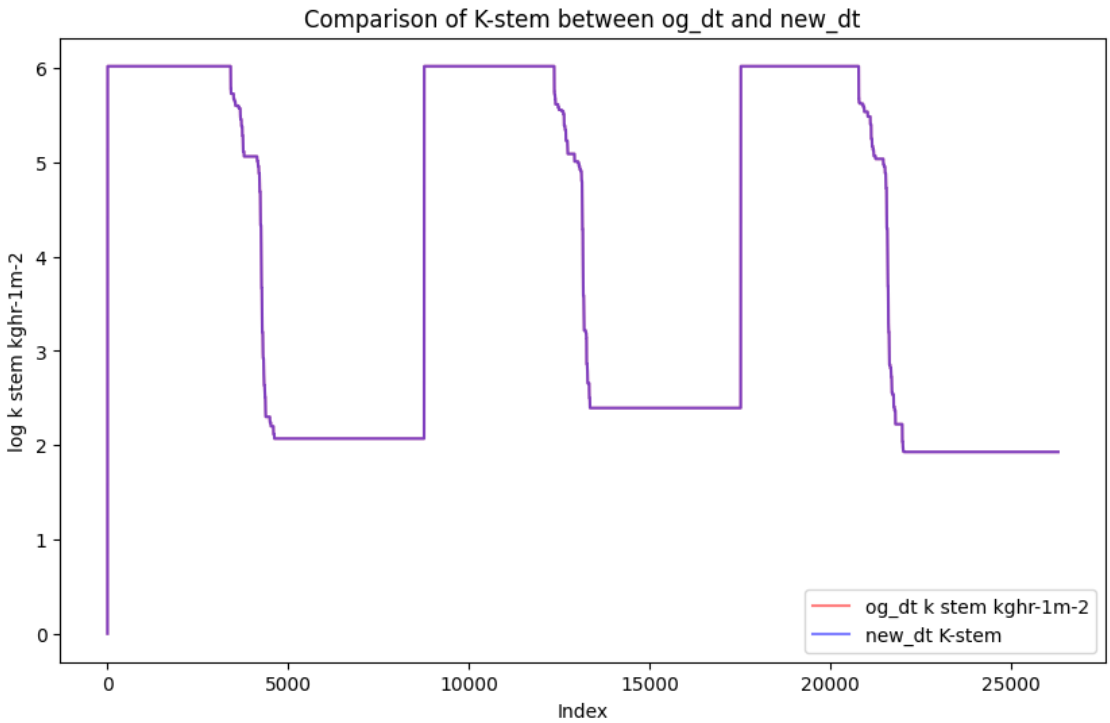

Comparison of Pstem MPa and P-stem
P-stem
Pstem MPa
0
1
2
3
4
5
6
7
8

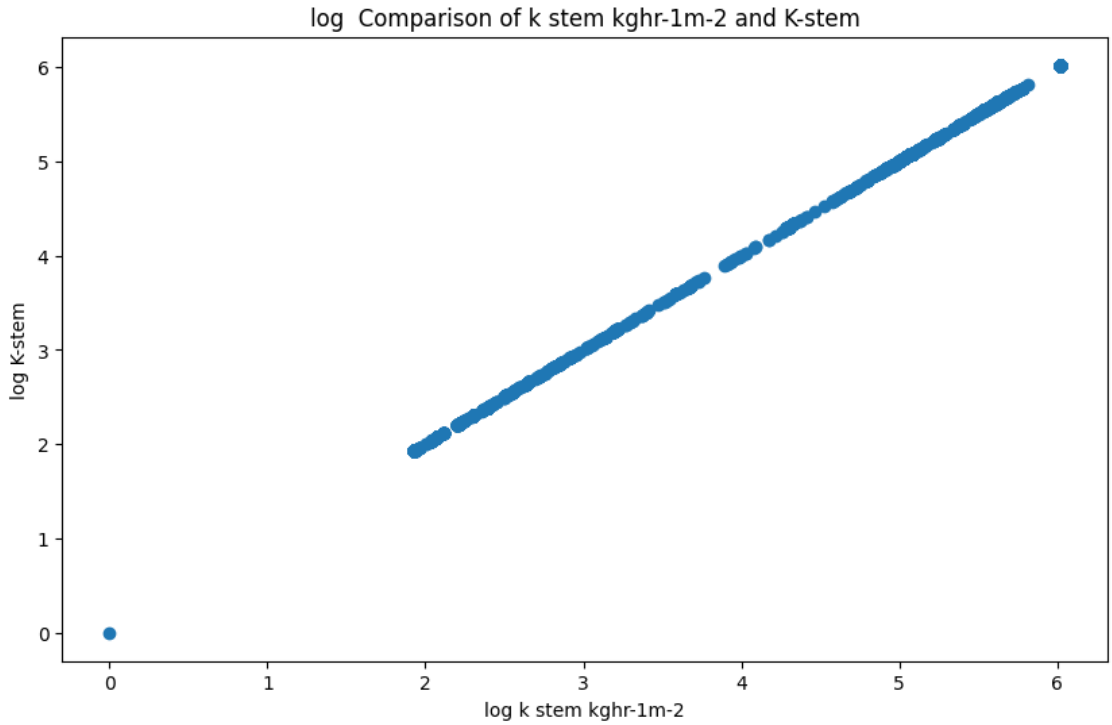
Proot MPa


Comparison of P-root between og_dt and new_dt
og_dt Proot MPa
new_dt P-root
Proot MPa
Index
0
1
2
3
4
5
6
7
0
5000
10000
15000
20000
25000

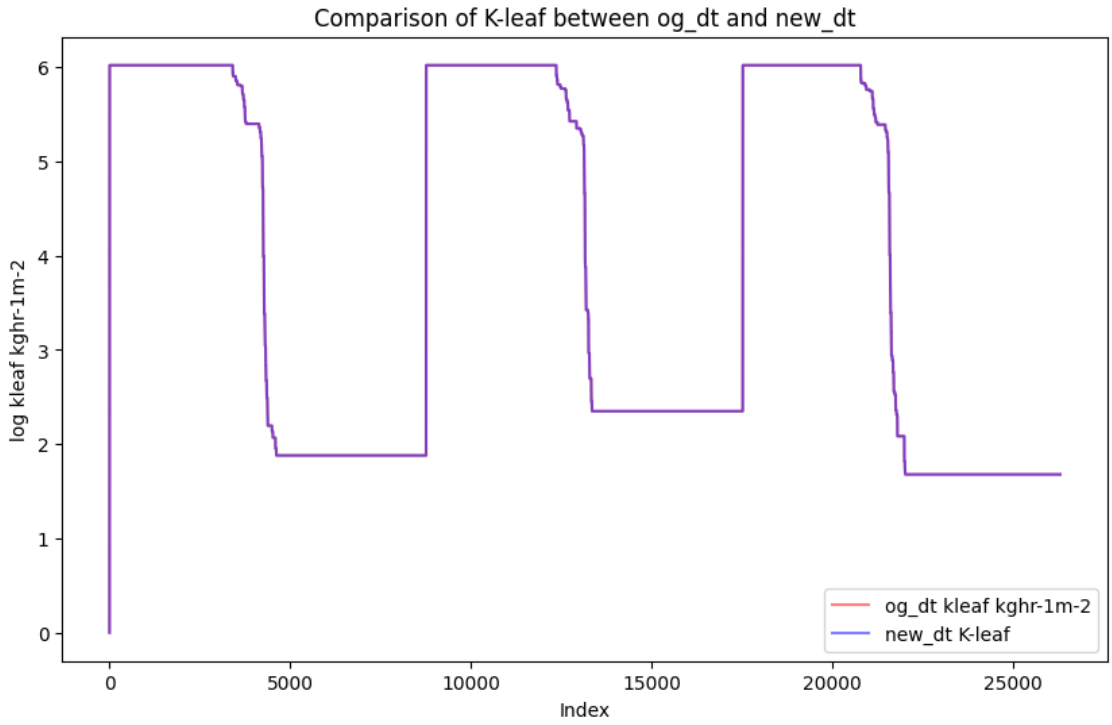


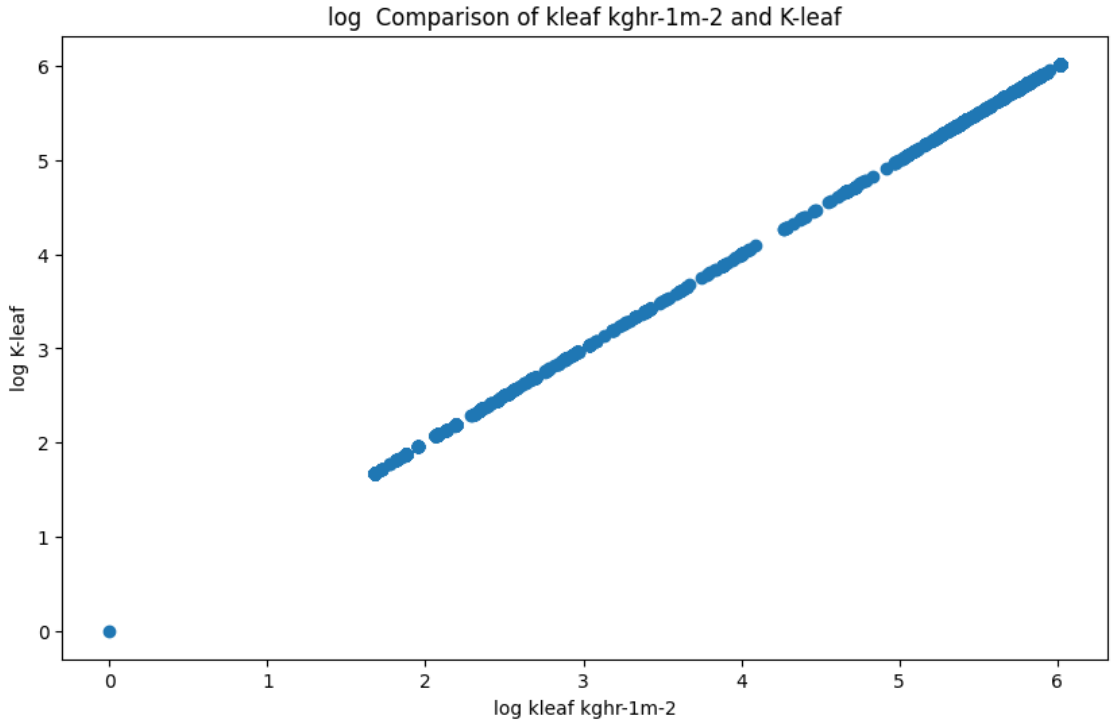
`k stem kghr-1m-2`



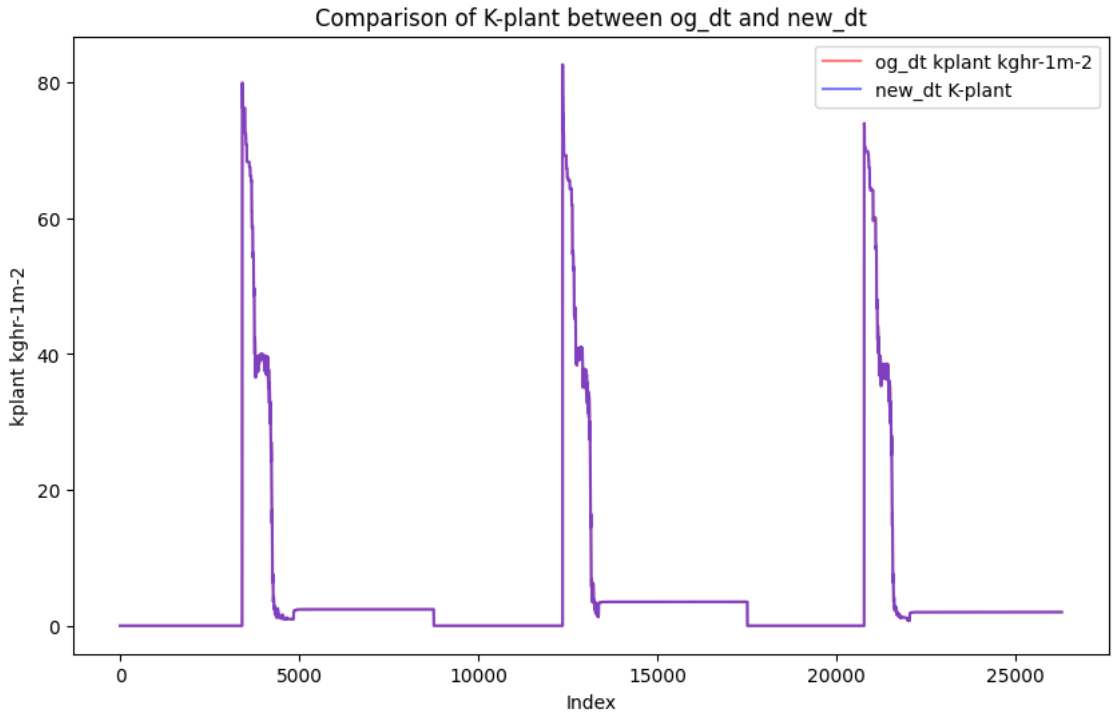


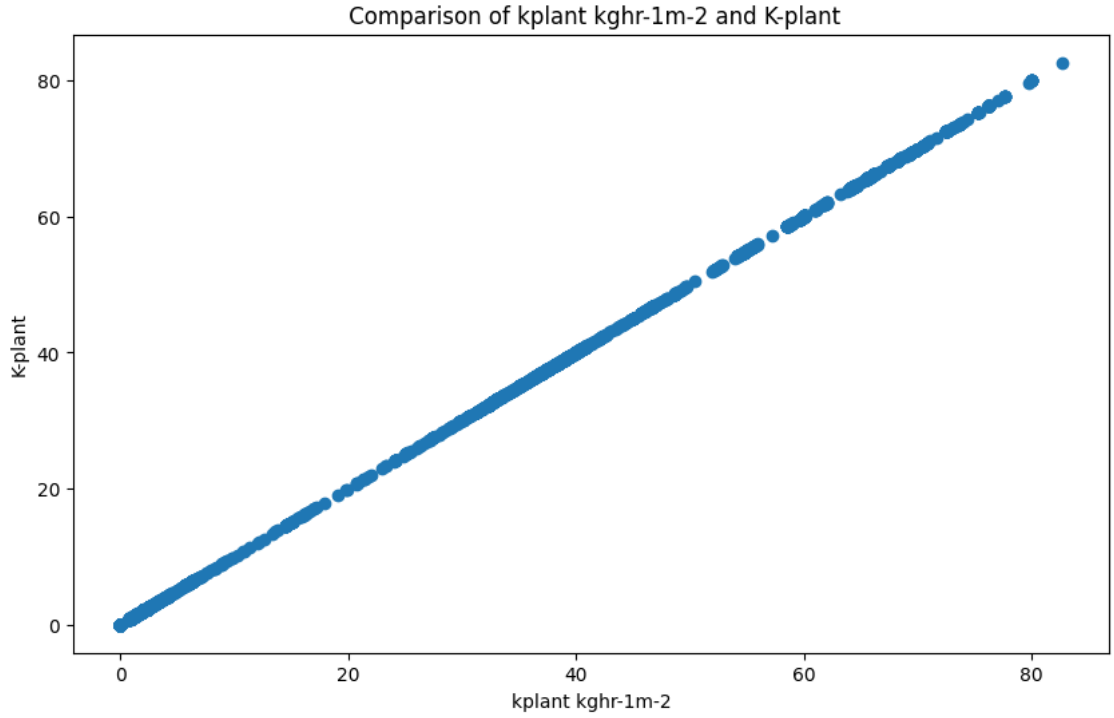
`kleaf kghr-1m-2`



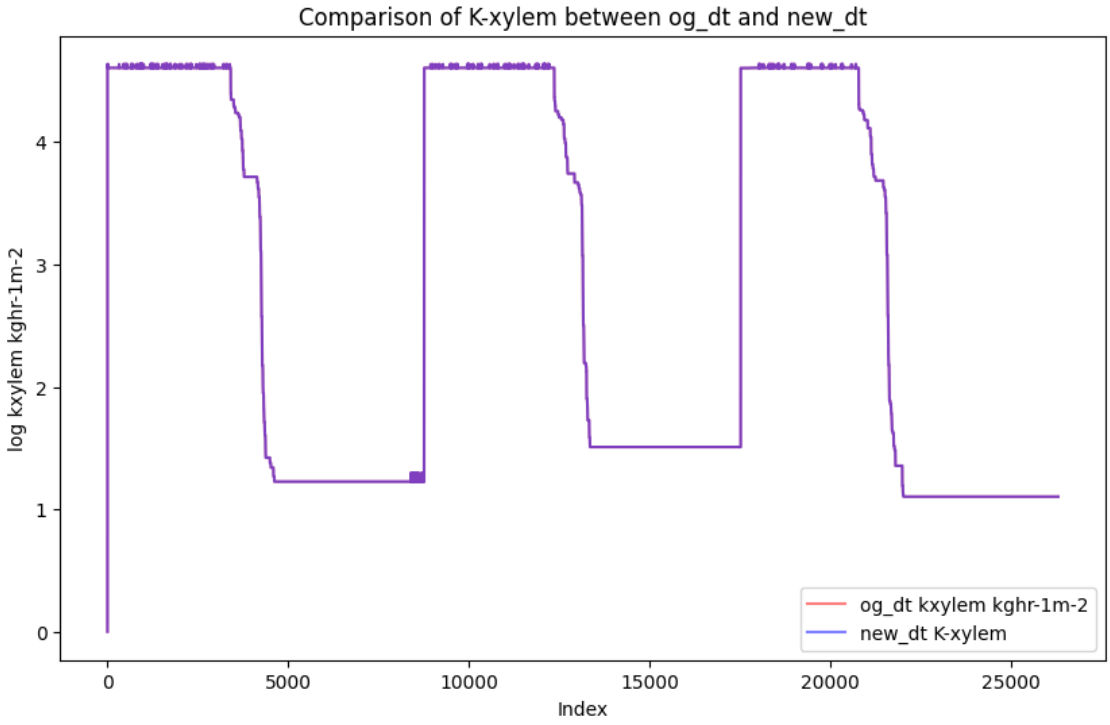


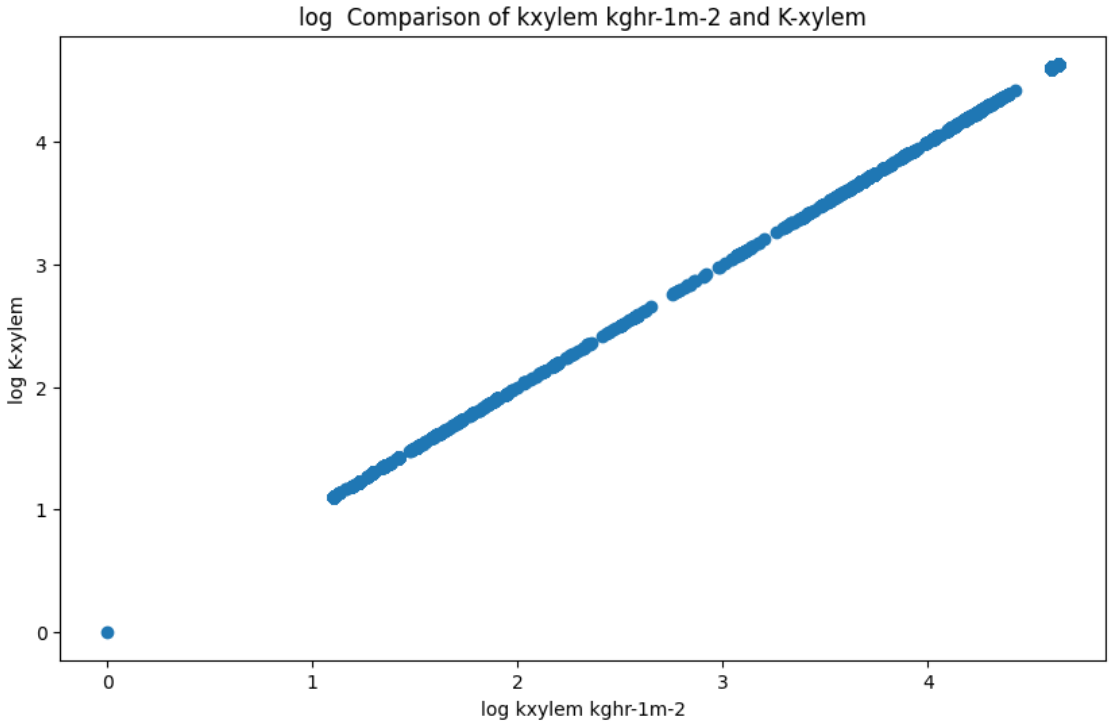
`kplant kghr-1m-2`



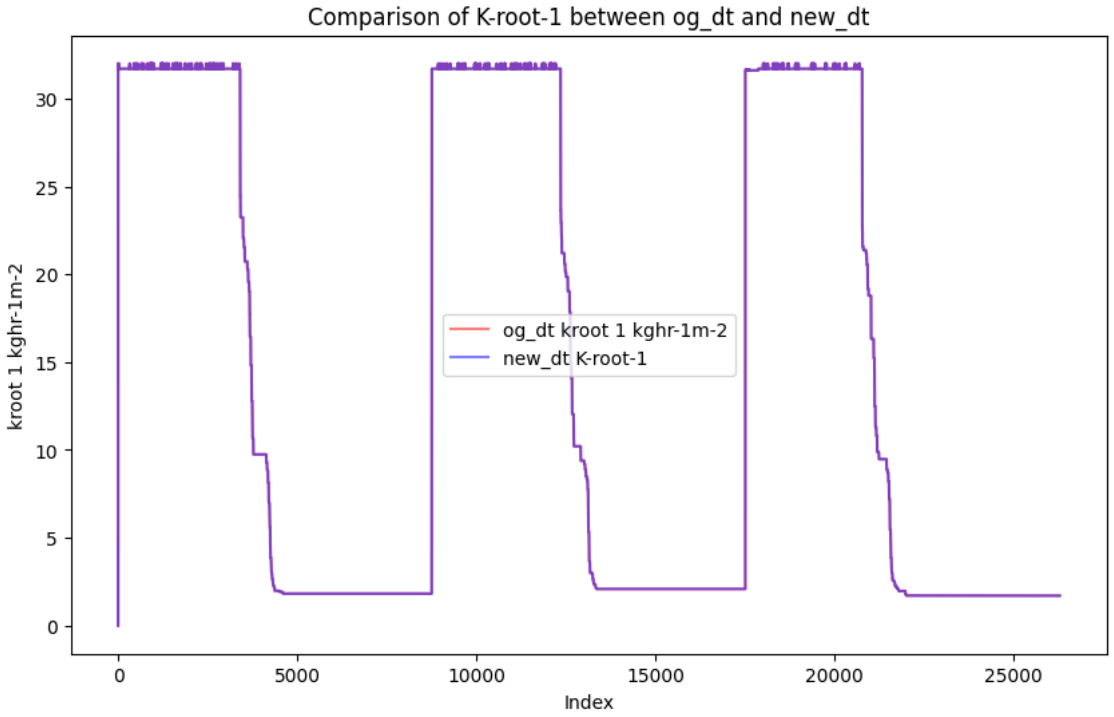


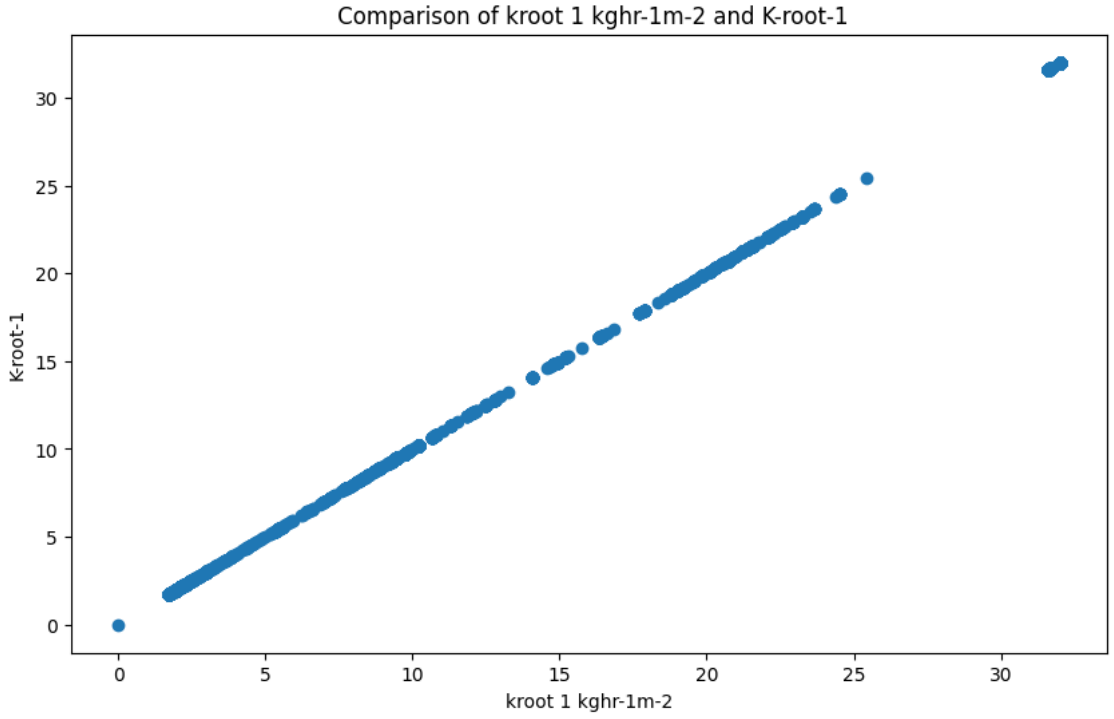
`kxylem kghr-1m-2`


Comparison of K-xylem between og_dt and new_dt
log kxylem kghr-1m-2
Index
og_dt kxylem kghr-1m-2
new_dt K-xylem
0
1
2
3
4
0
5000
10000
15000
20000
25000

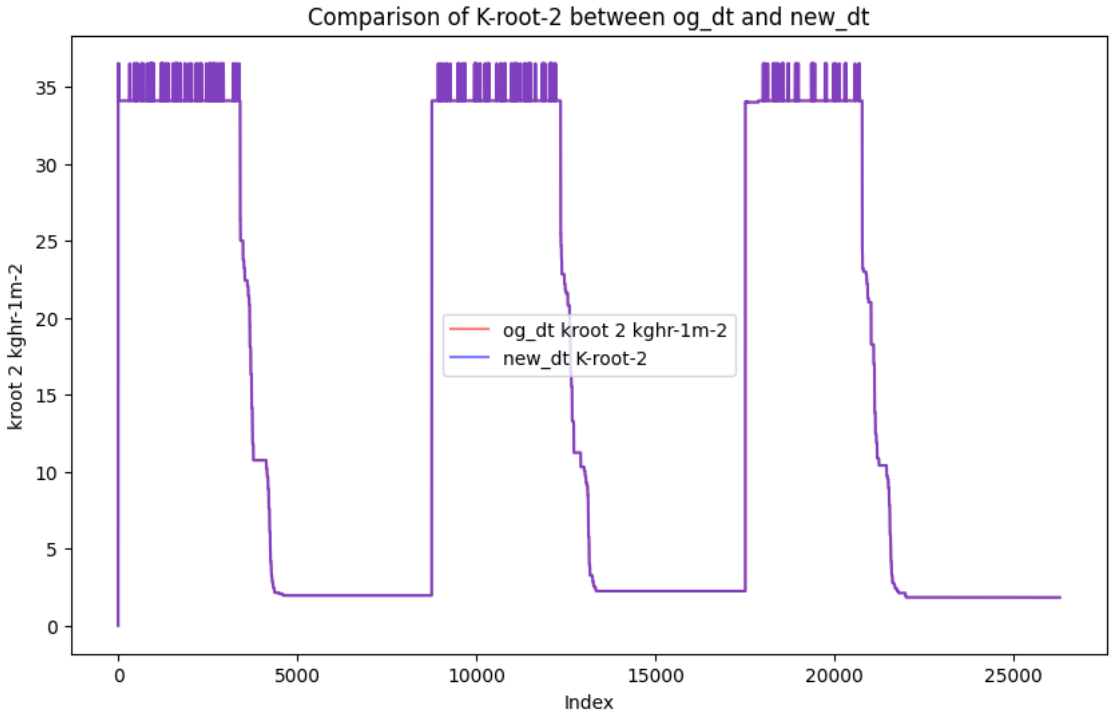

log Comparison of kxylem kghr-1m-2 and K-xylem
log K-xylem
log kxylem kghr-1m-2
0
1
2
3
4

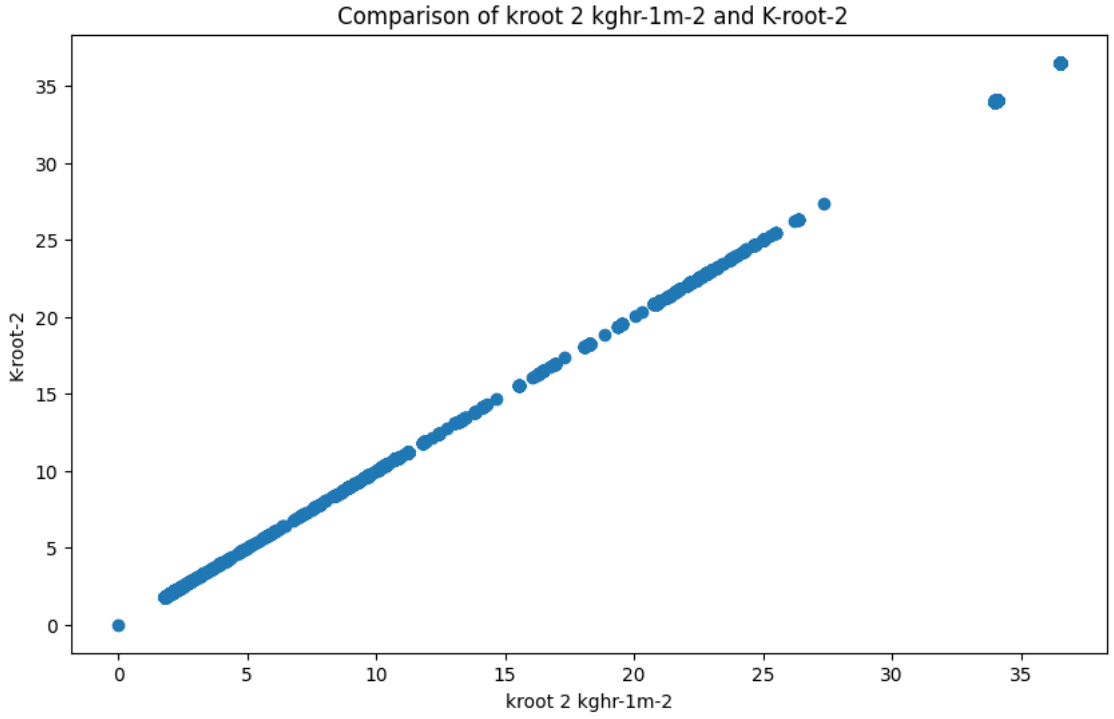
kroot 1 kghr-1m-2



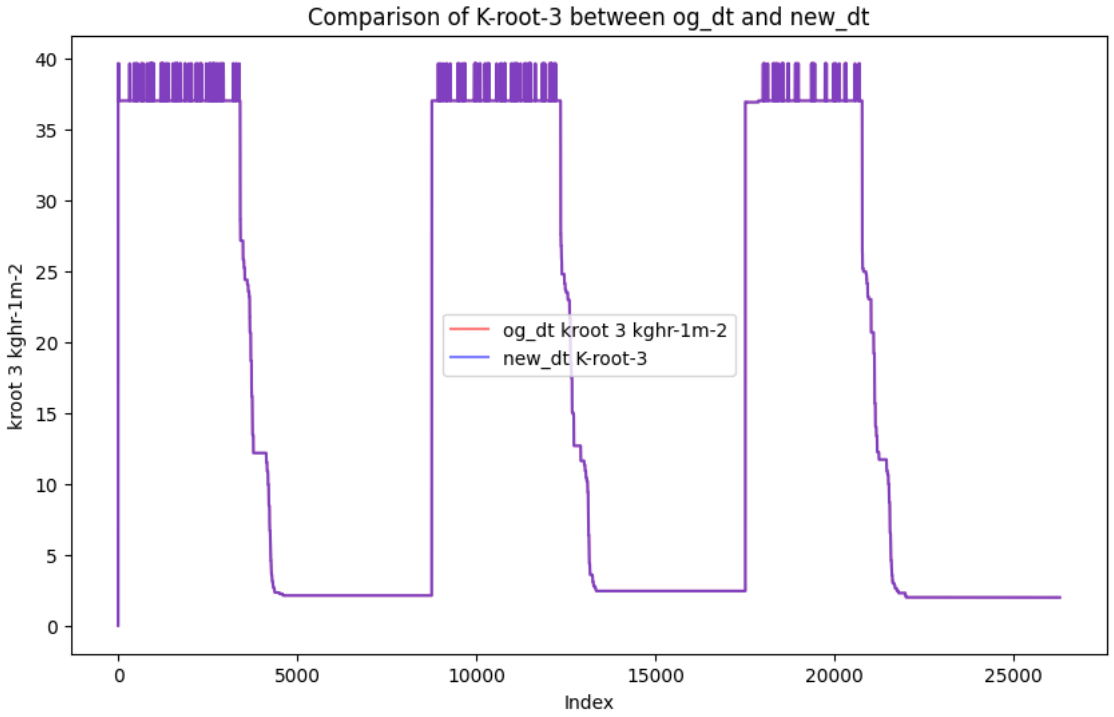


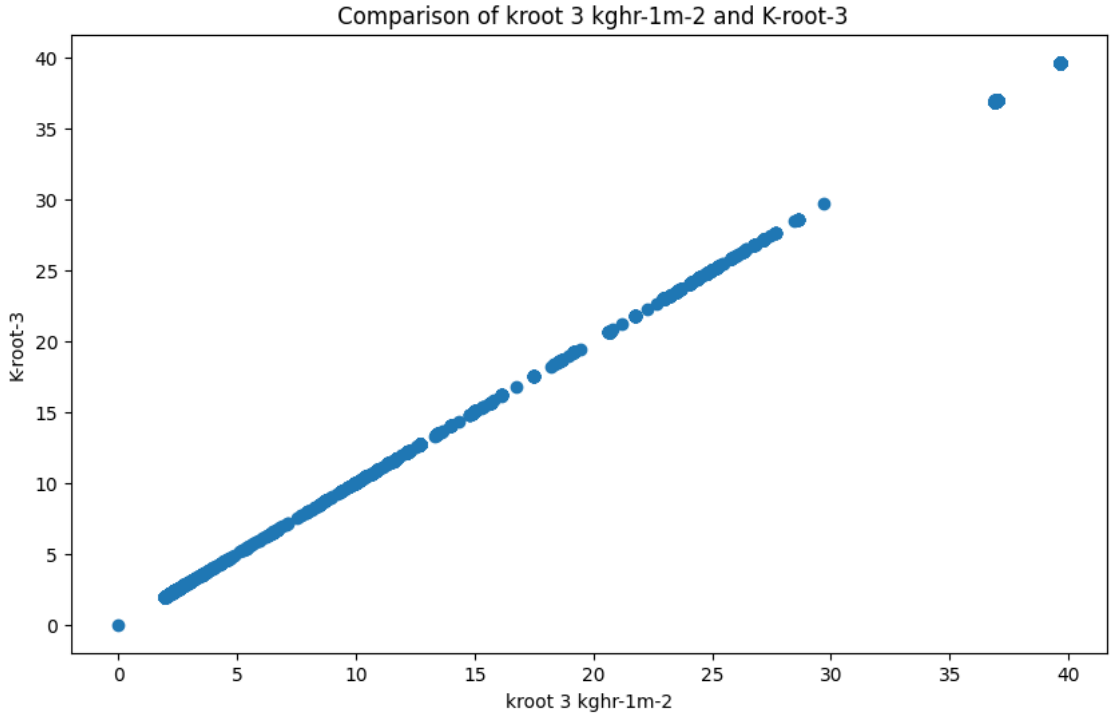
kroot 2 kghr-1m-2



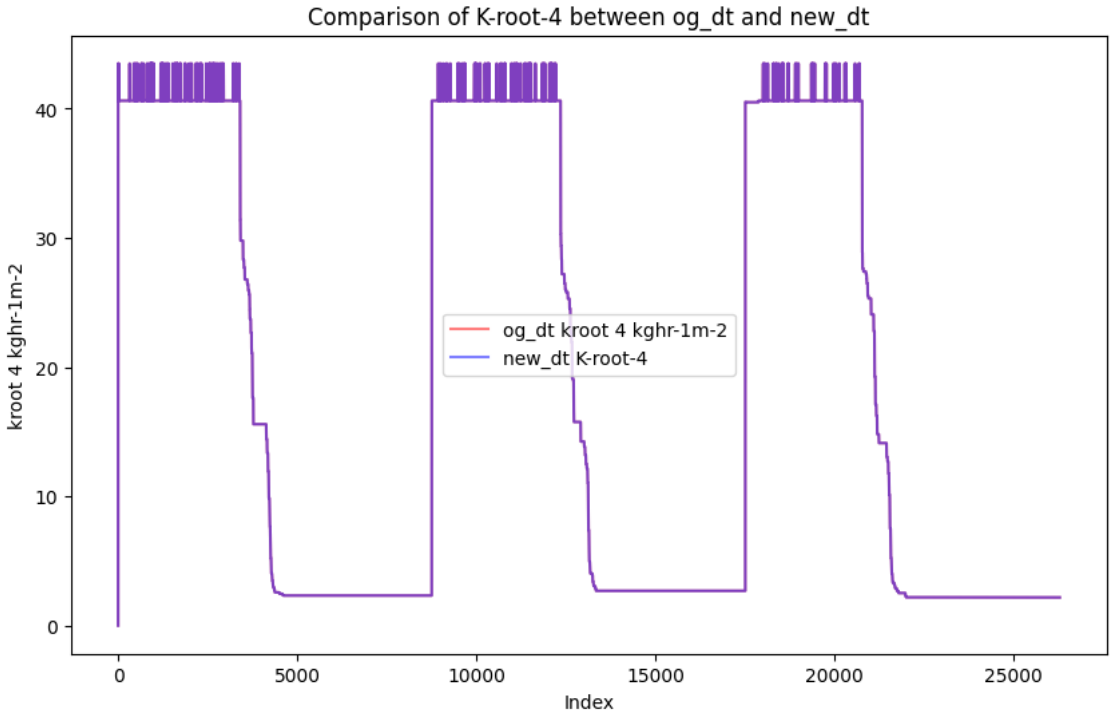


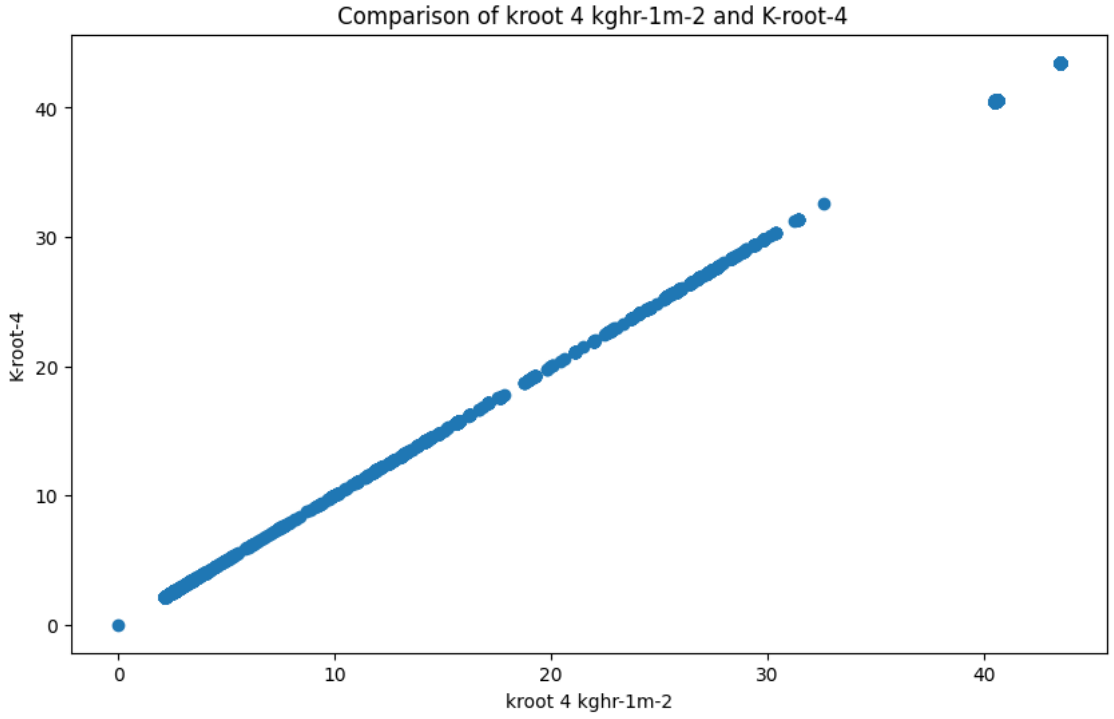
kroot 3 kghr-1m-2



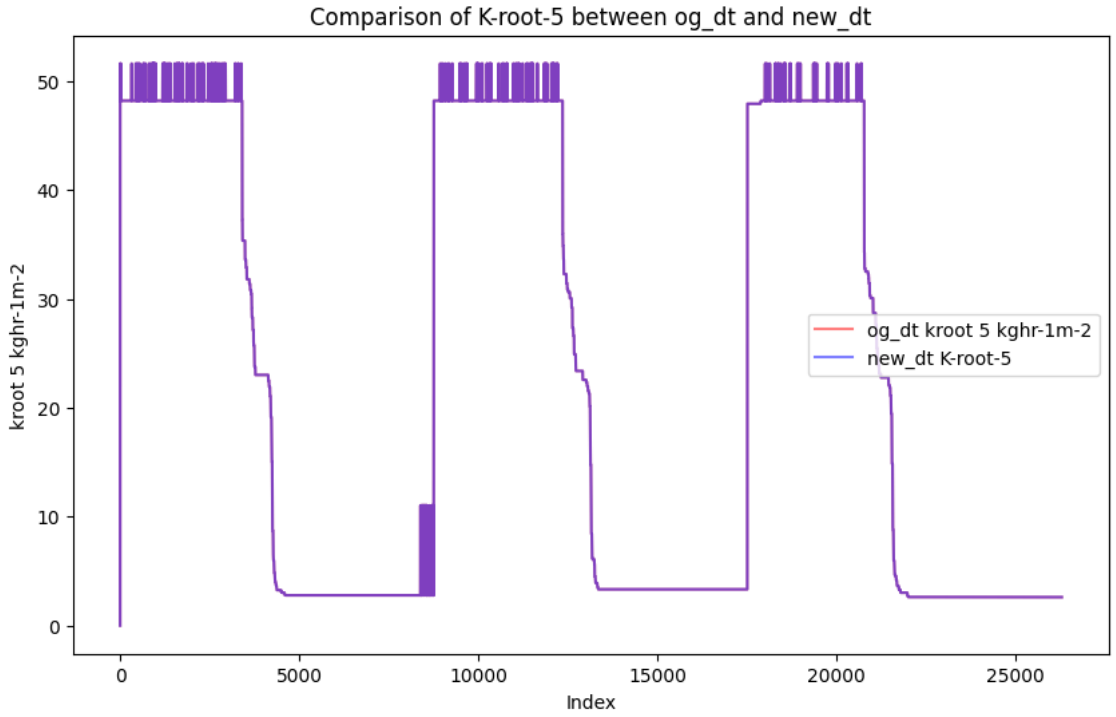


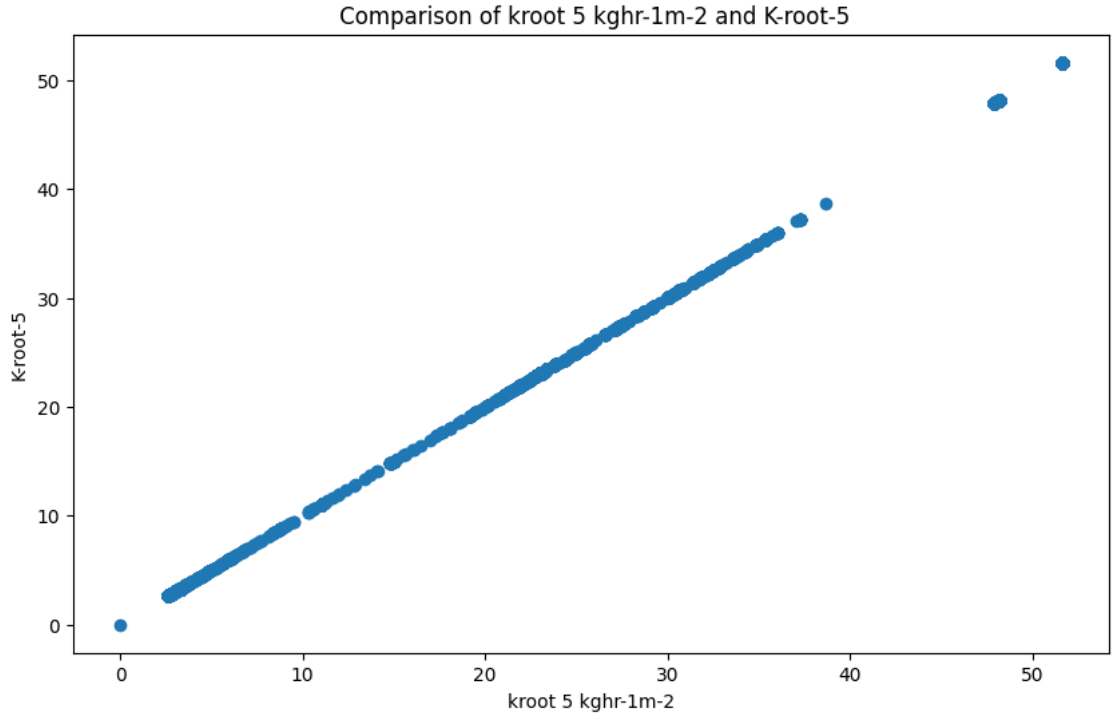
kroot 4 kghr-1m-2



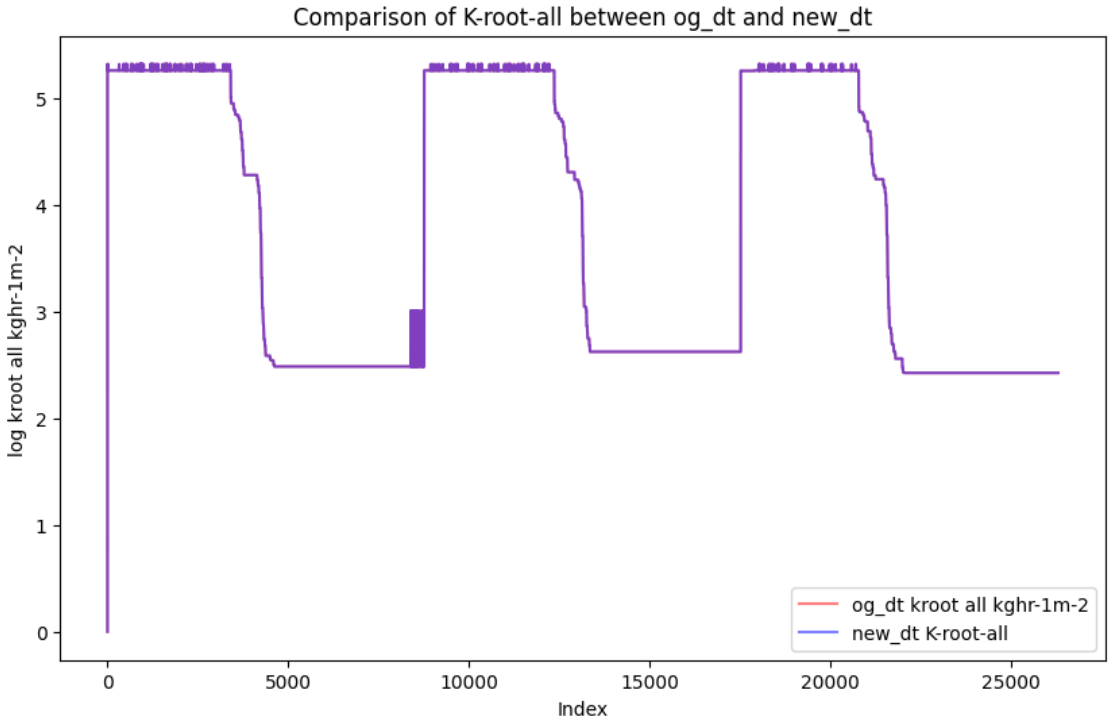


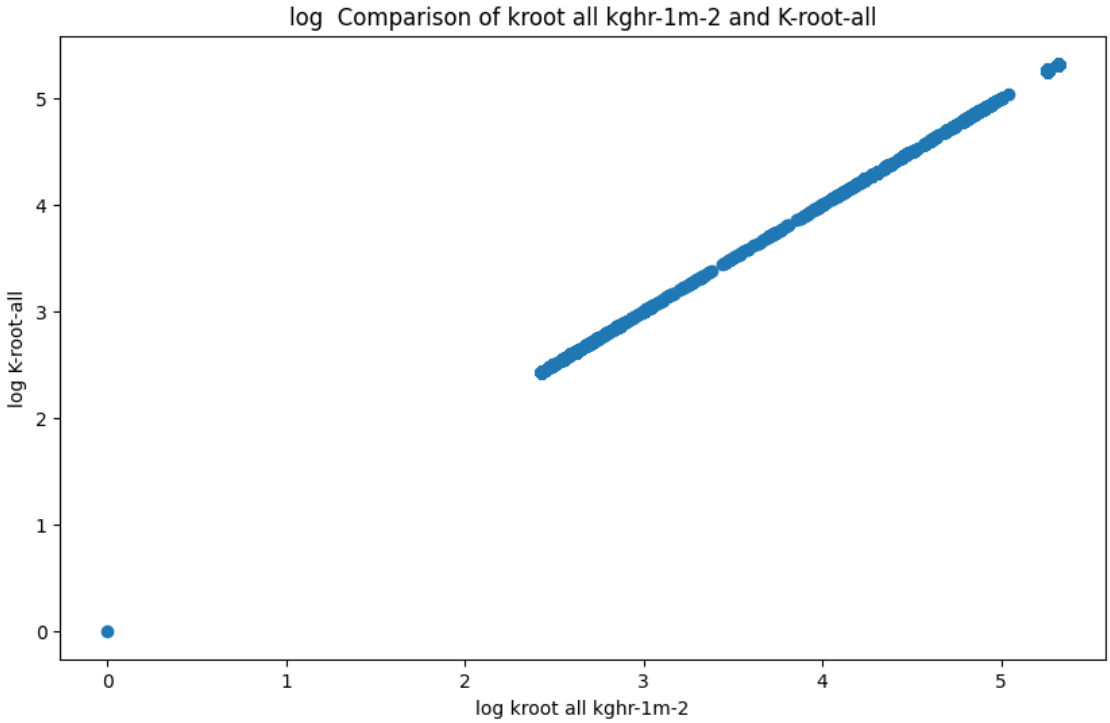
kroot 5 kghr-1m-2



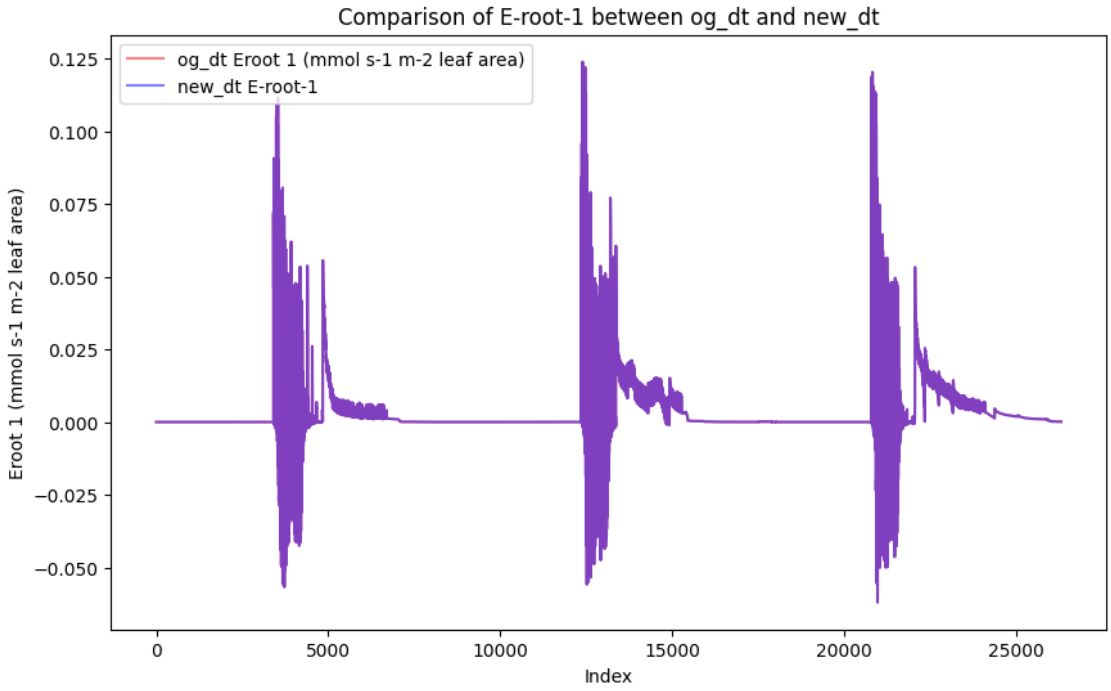


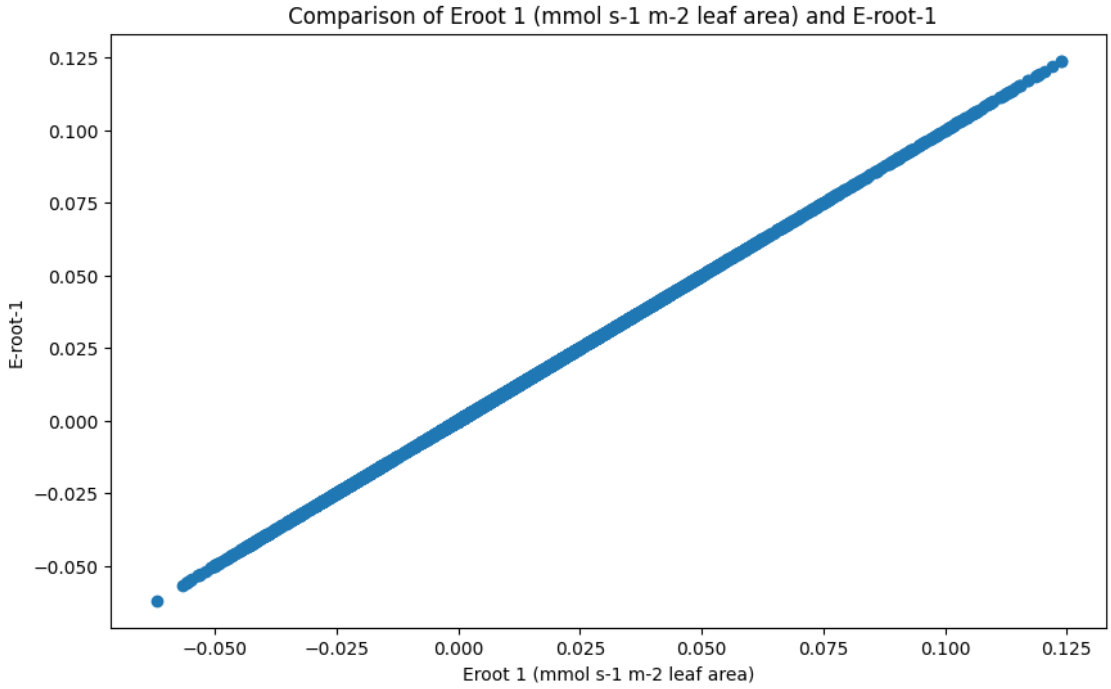
kroot all kghr-1m-2



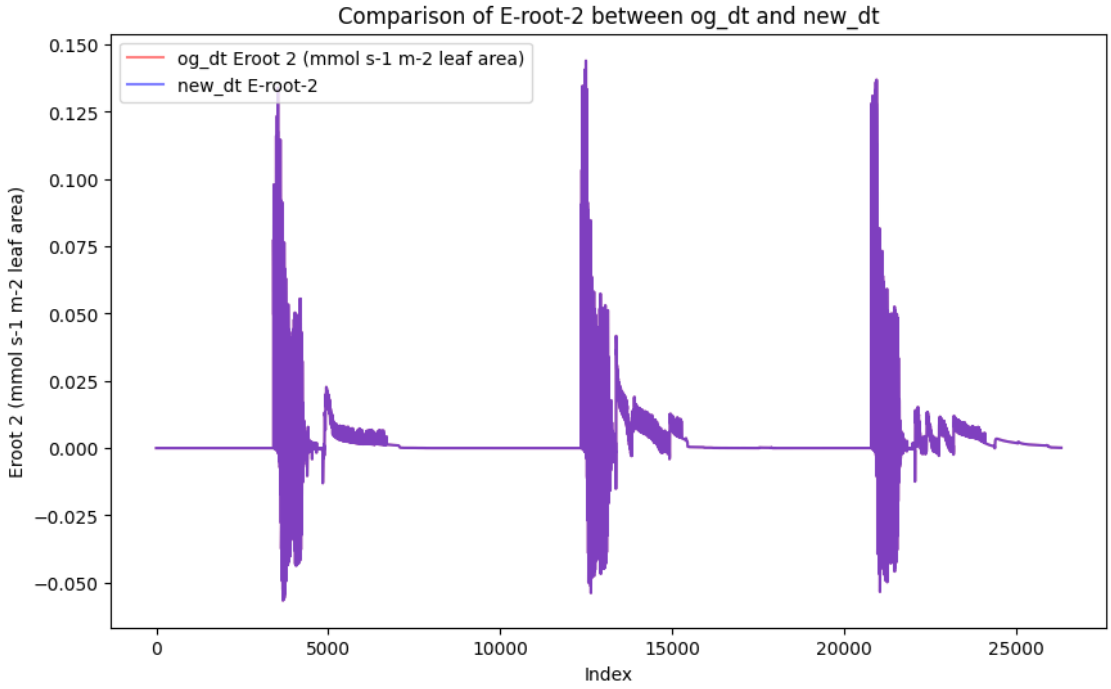


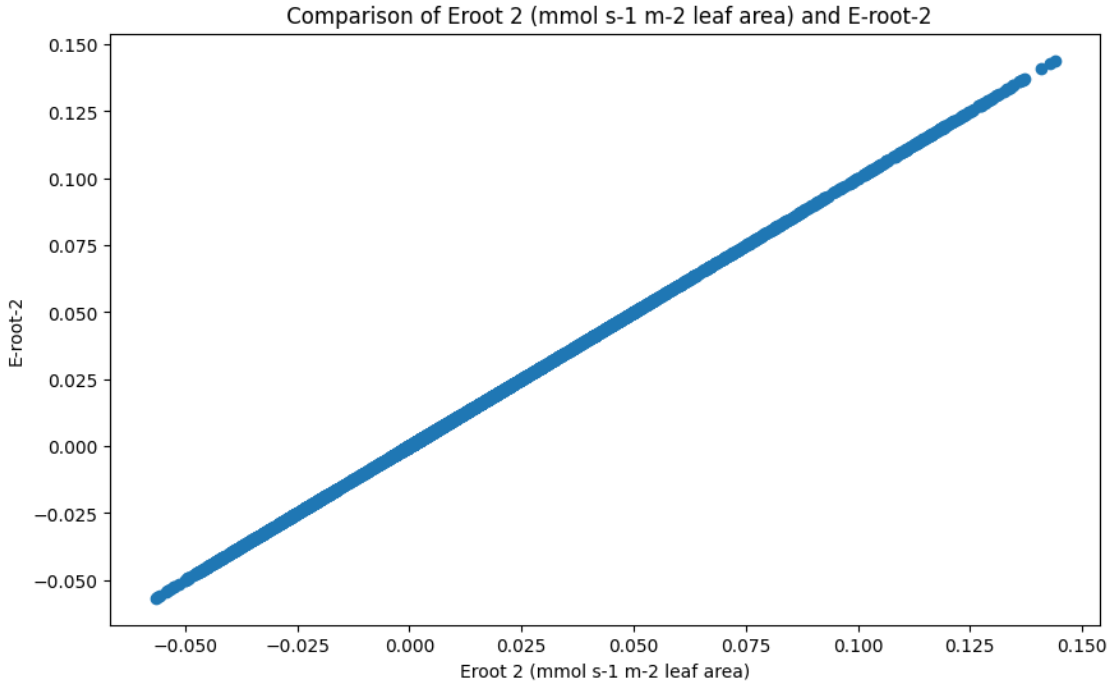
Eroot 1 (mmol s-1 m-2 leaf area)



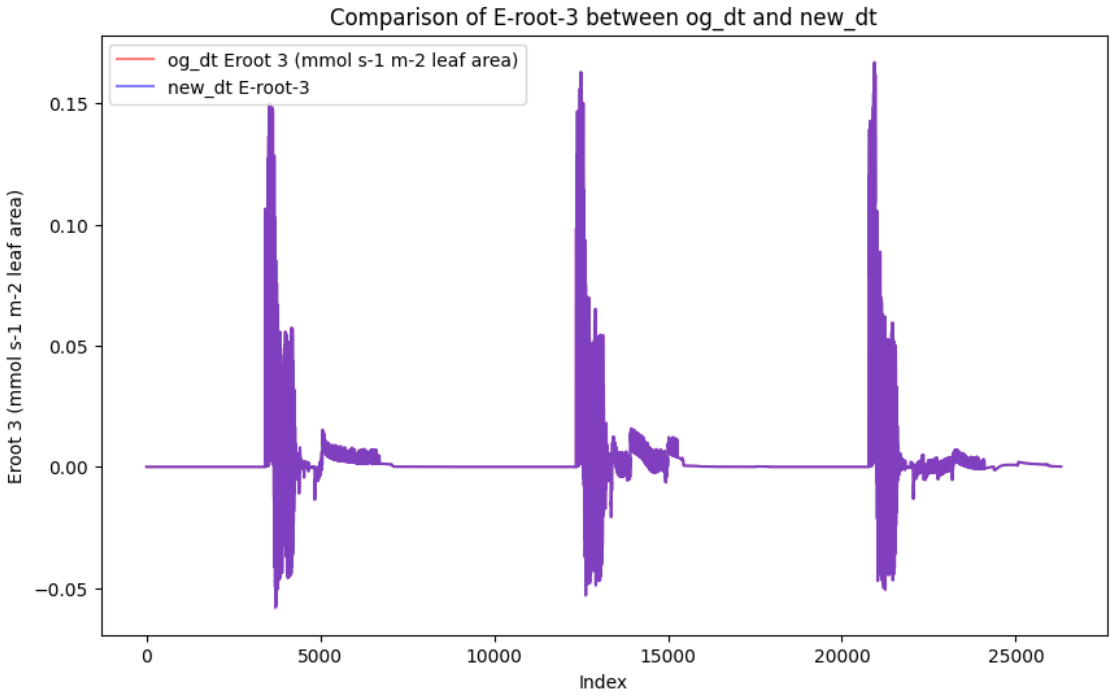


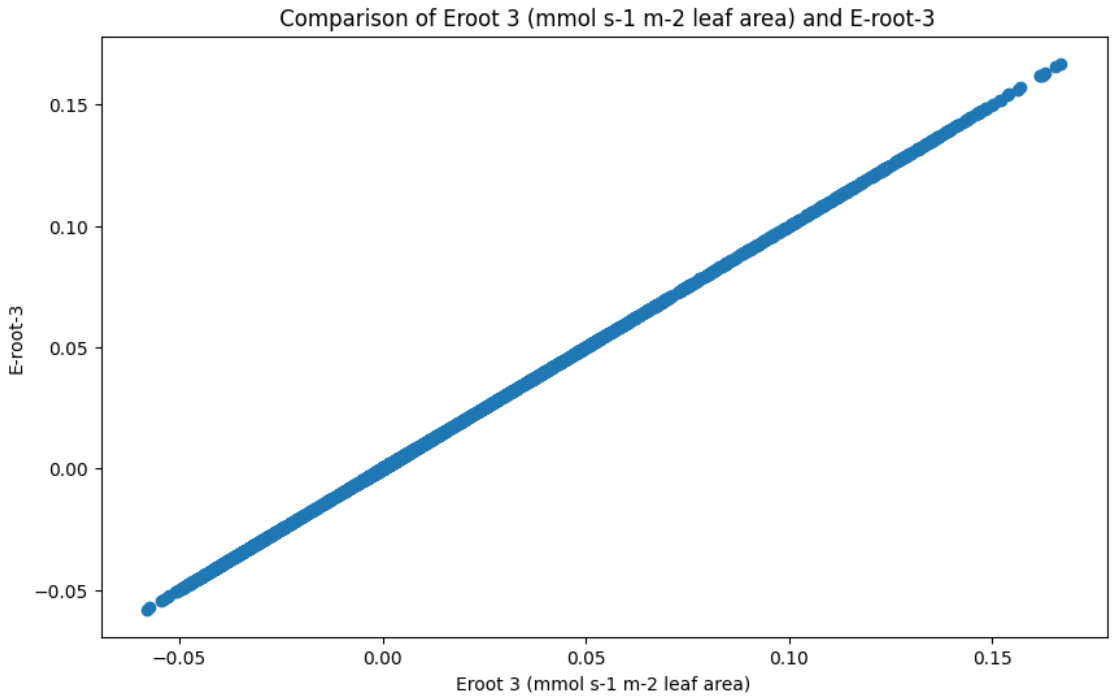
Eroot 2 (mmol s-1 m-2 leaf area)



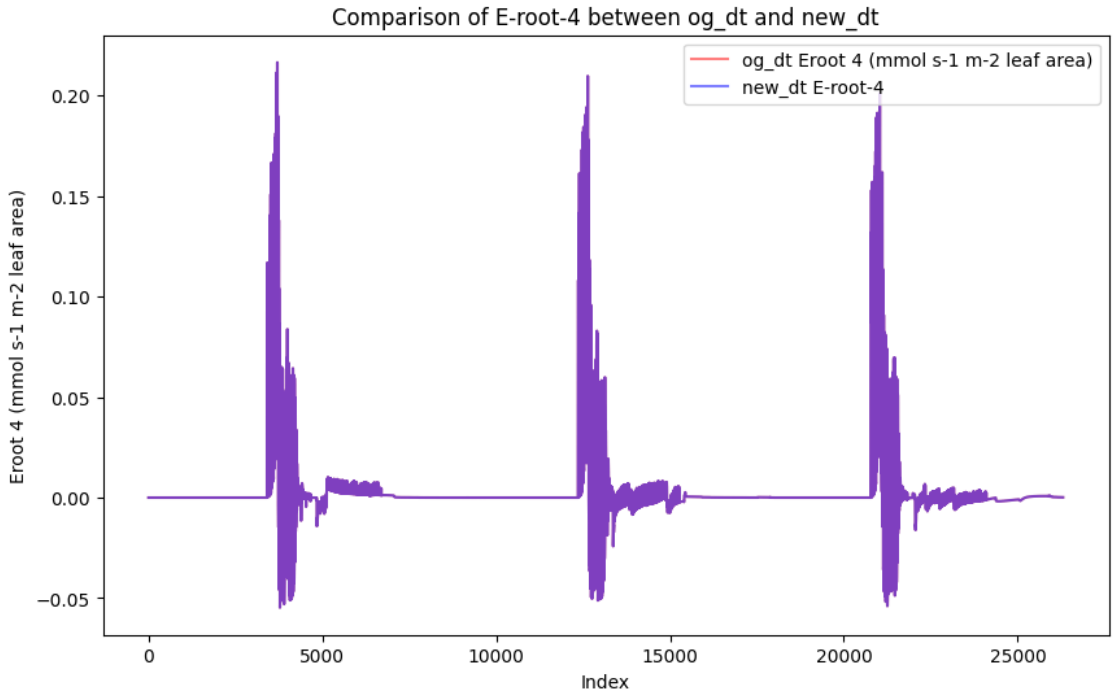


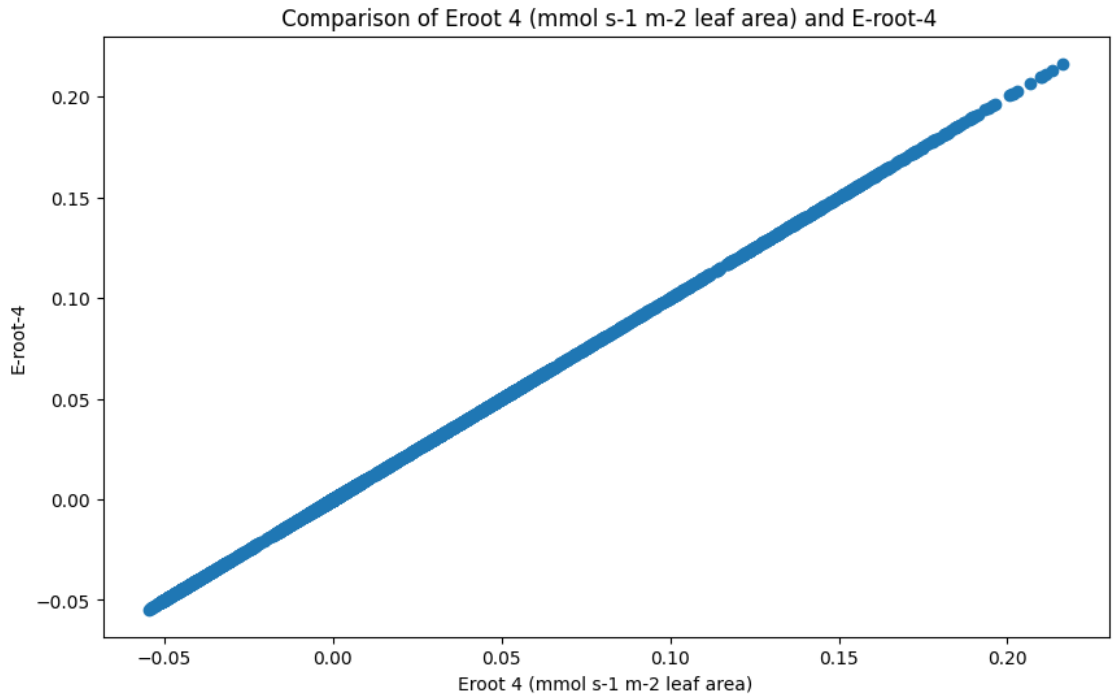
Eroot 3 (mmol s-1 m-2 leaf area)



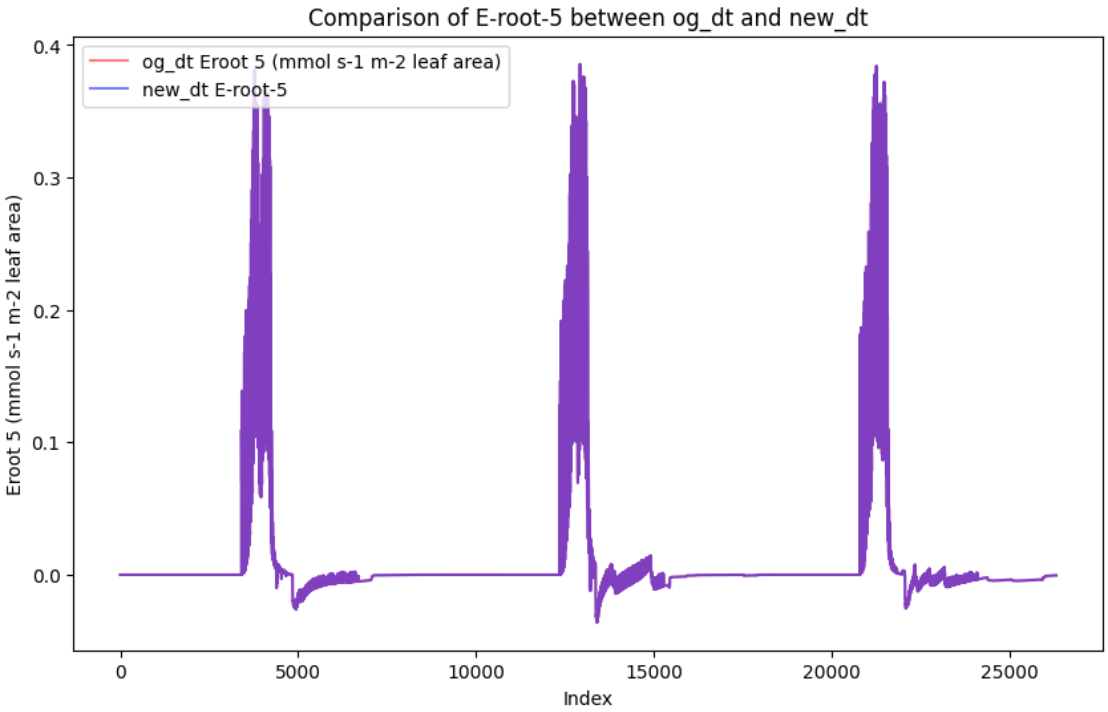


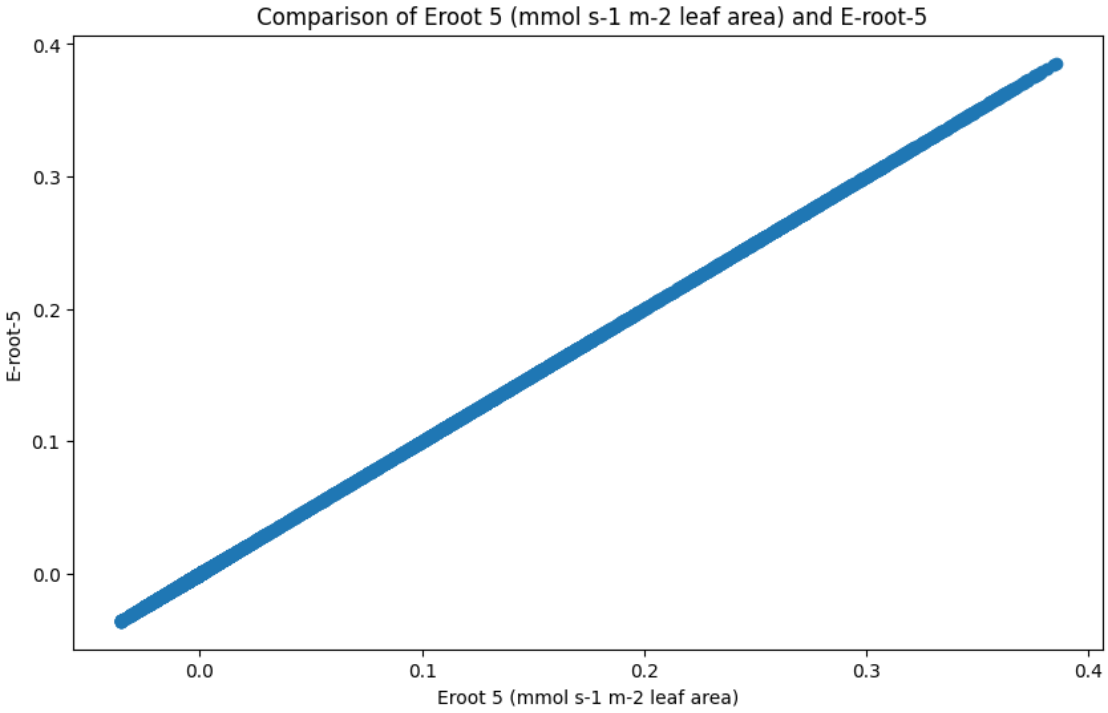
Eroot 4 (mmol s-1 m-2 leaf area)



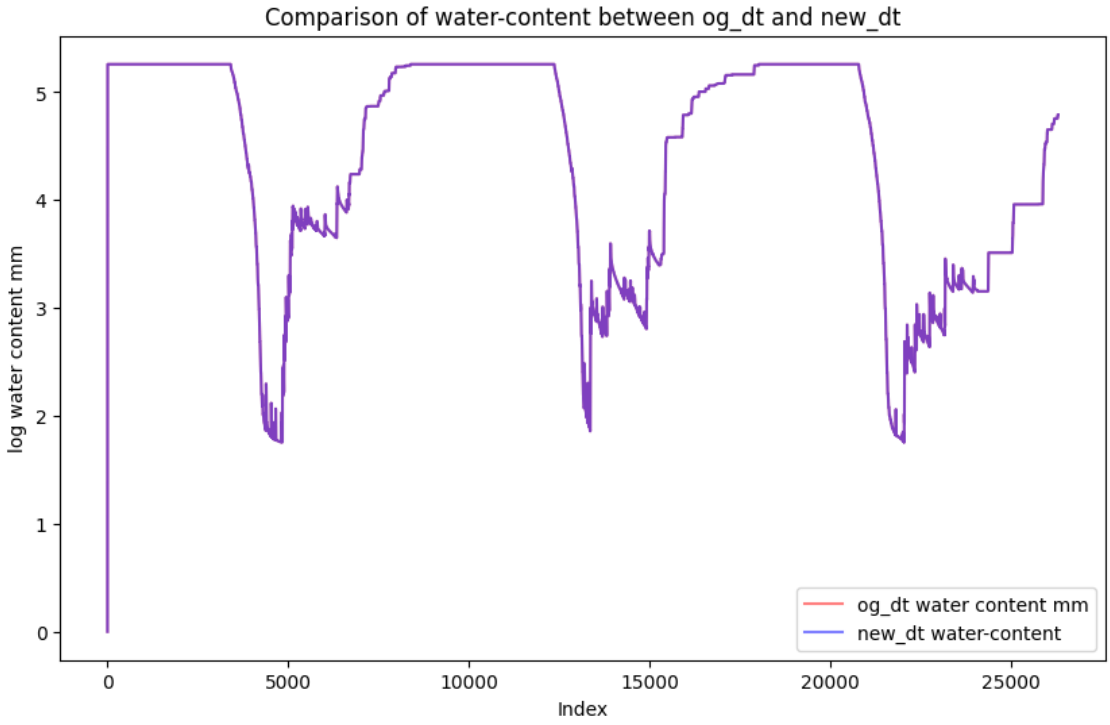


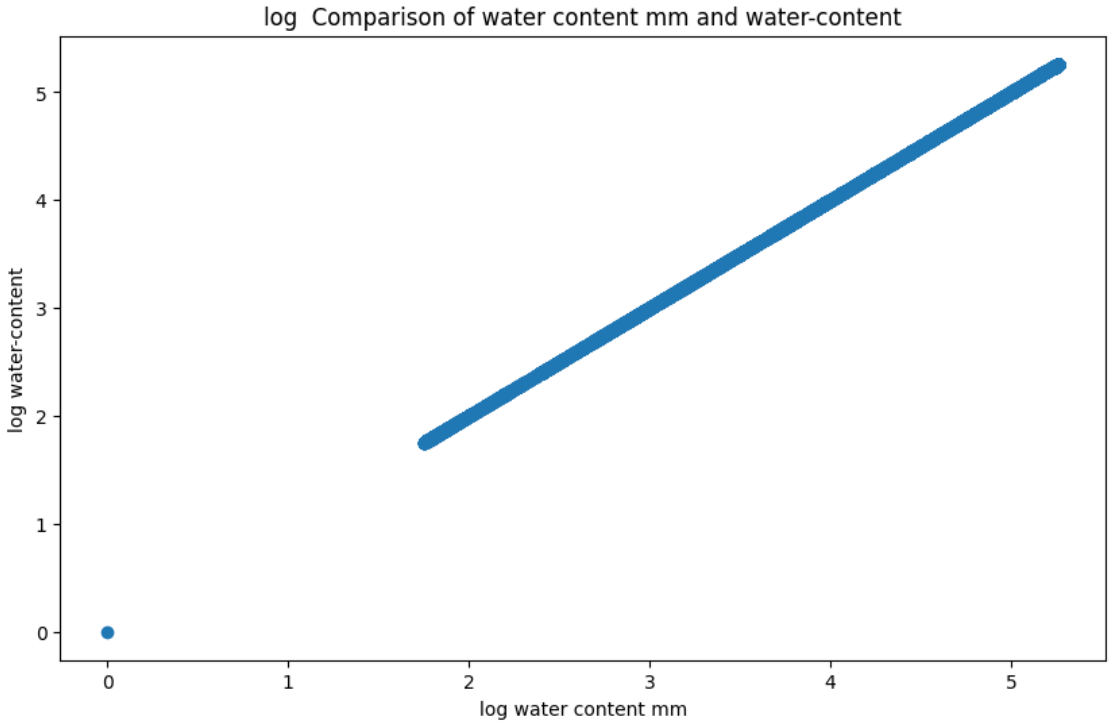
Eroot 5 (mmol s-1 m-2 leaf area)



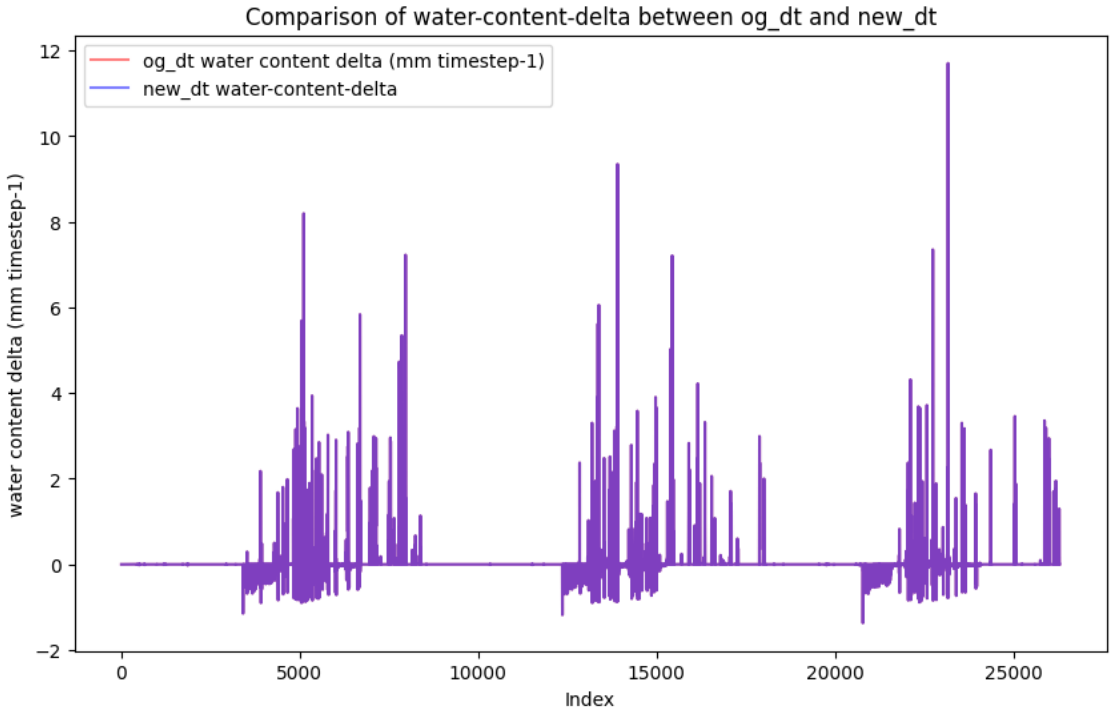


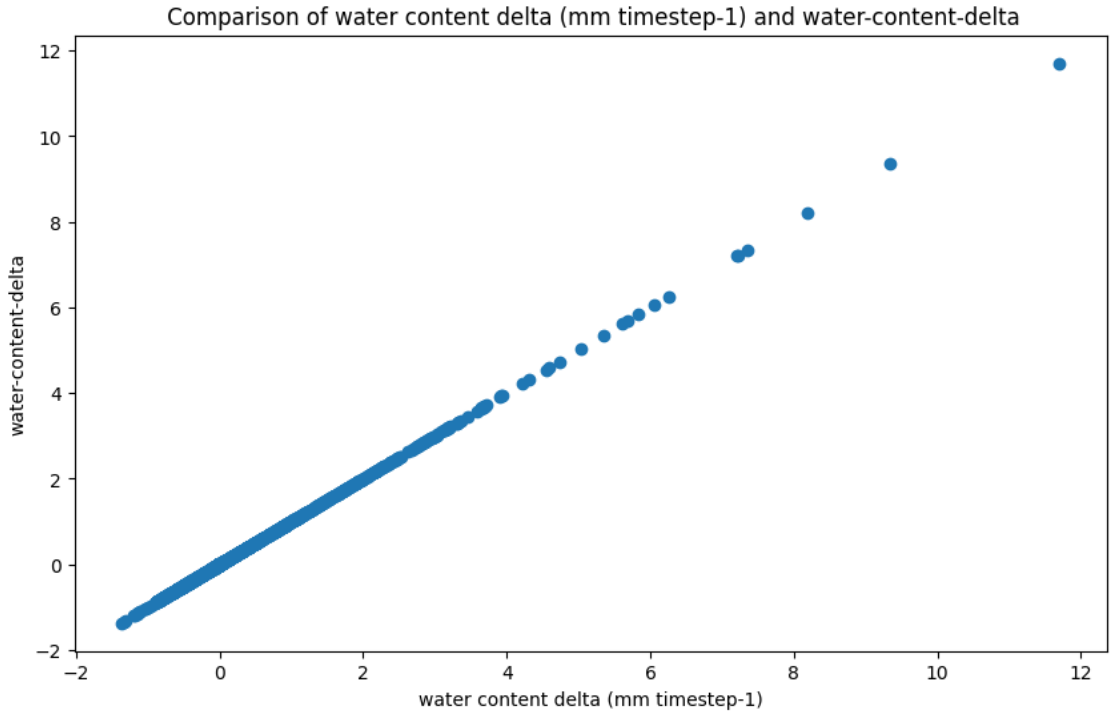
water content mm


Comparison of water-content between og_dt and new_dt
log water content mm
Index
og_dt water content mm
new_dt water-content
0
1
2
3
4
5
0
5000
10000
15000
20000
25000

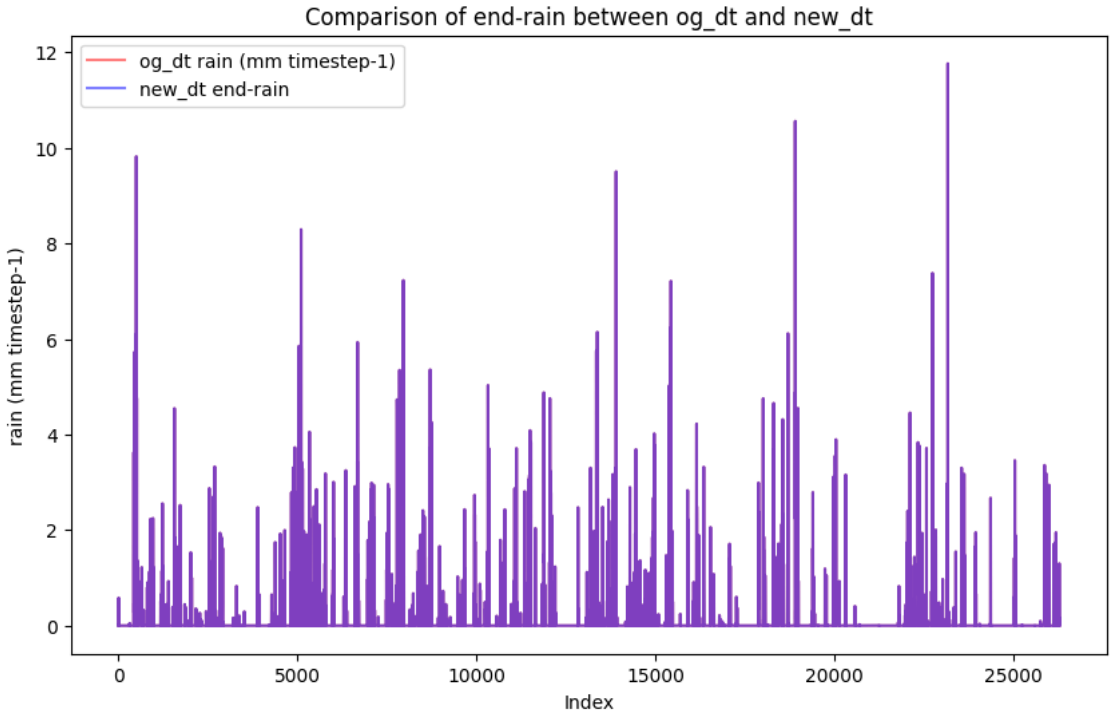

log Comparison of water content mm and water-content
log water-content
log water content mm
0
1
2
3
4
5

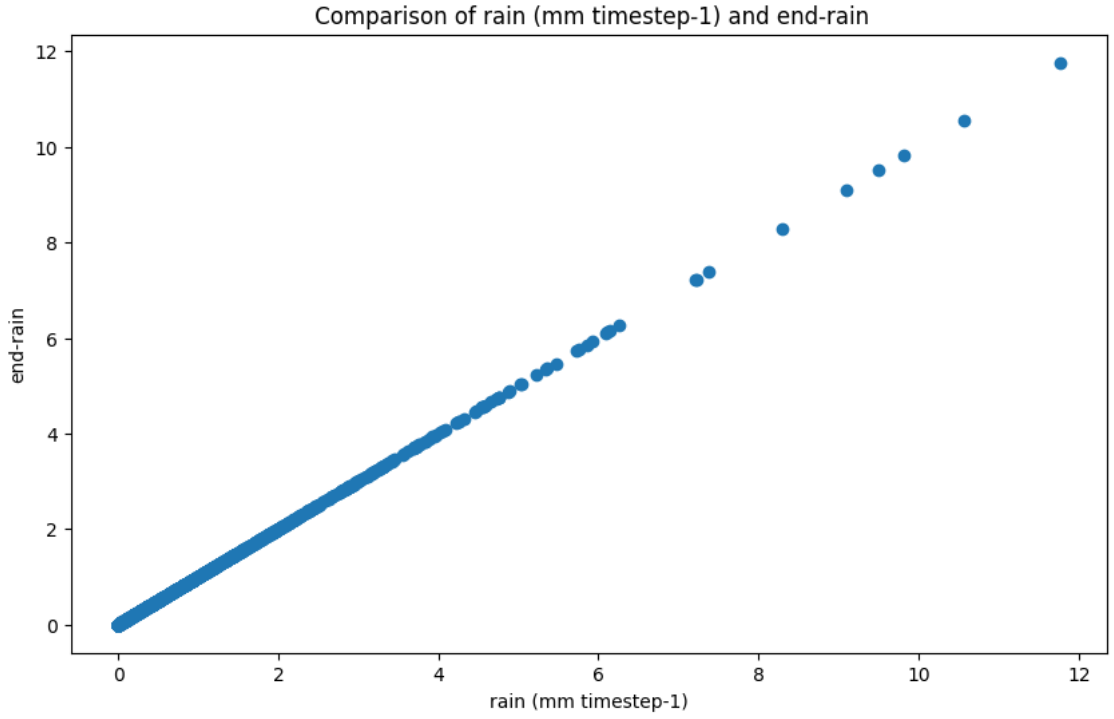
water content delta (mm timestep-1)



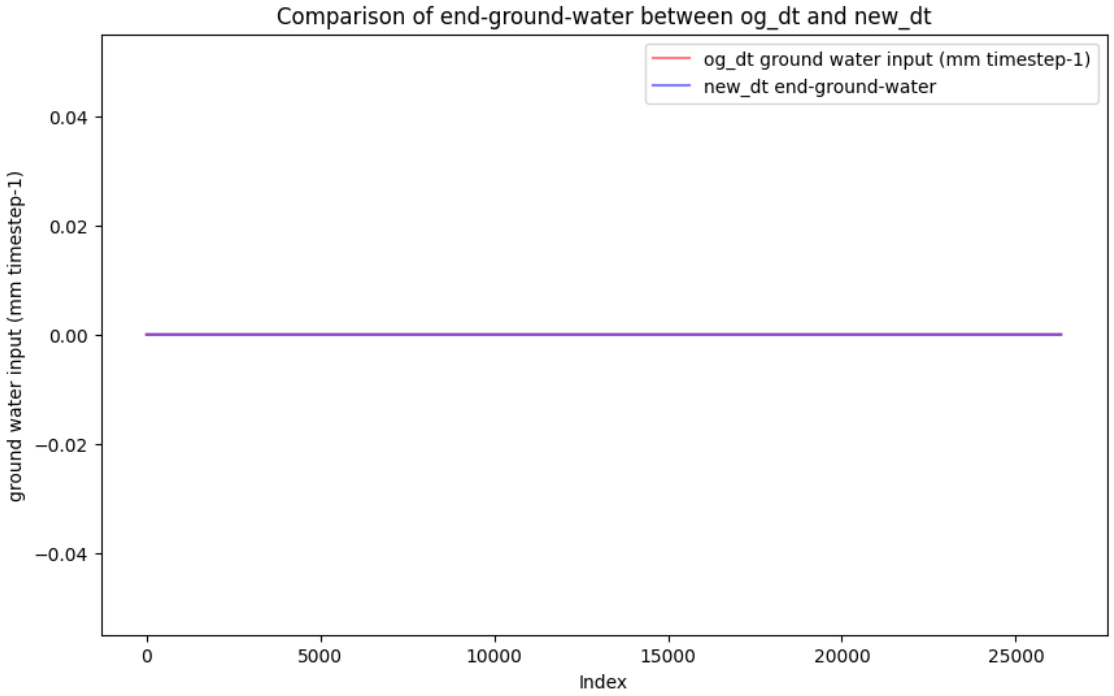


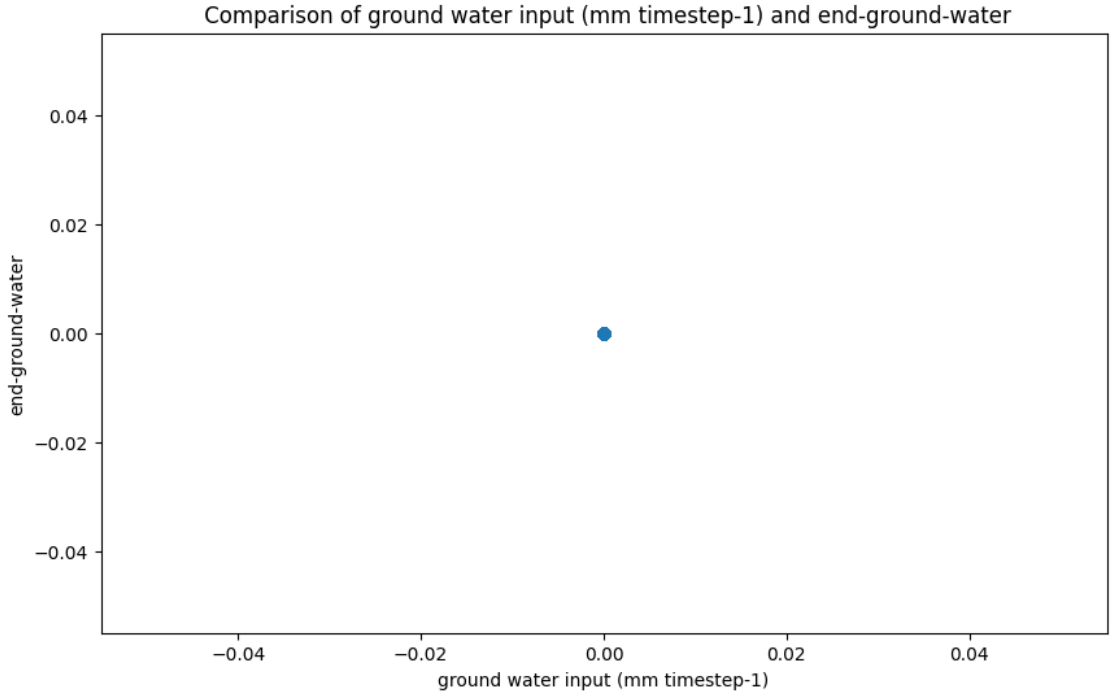
rain (mm timestep-1)



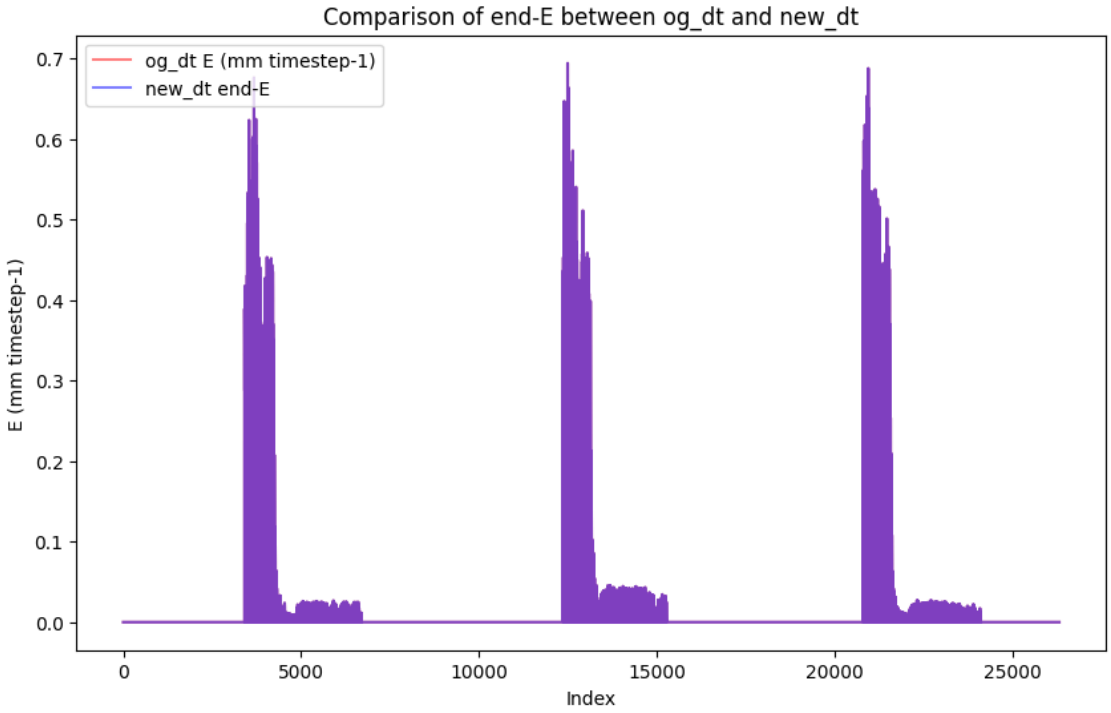


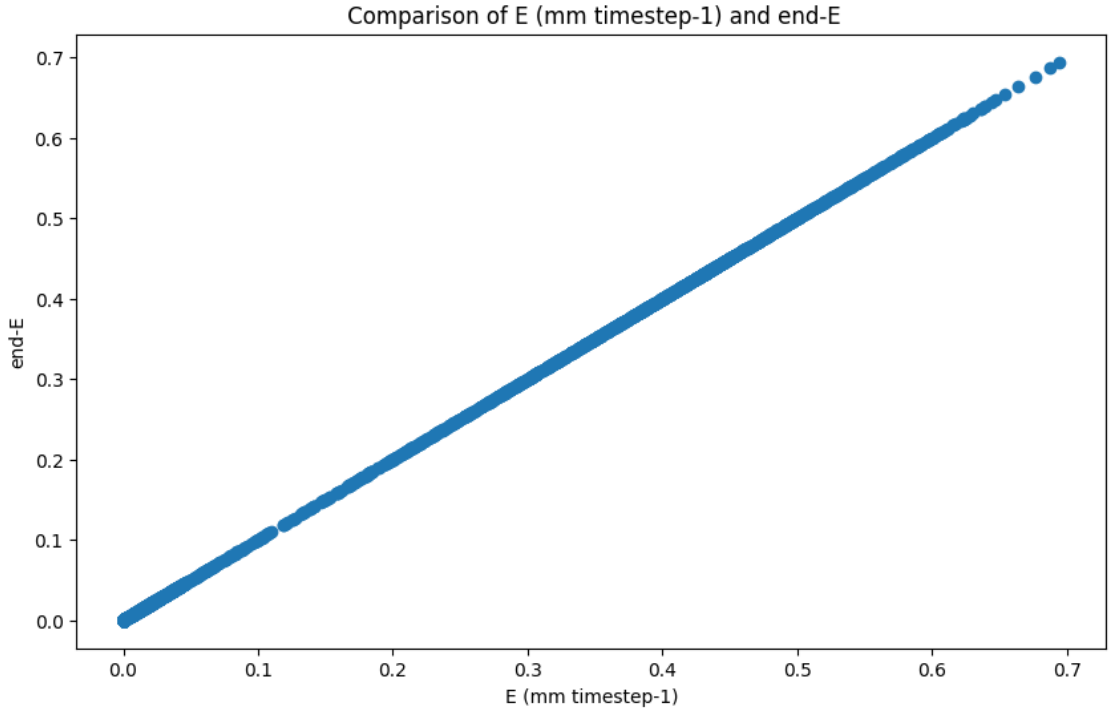
ground water input (mm timestep-1)



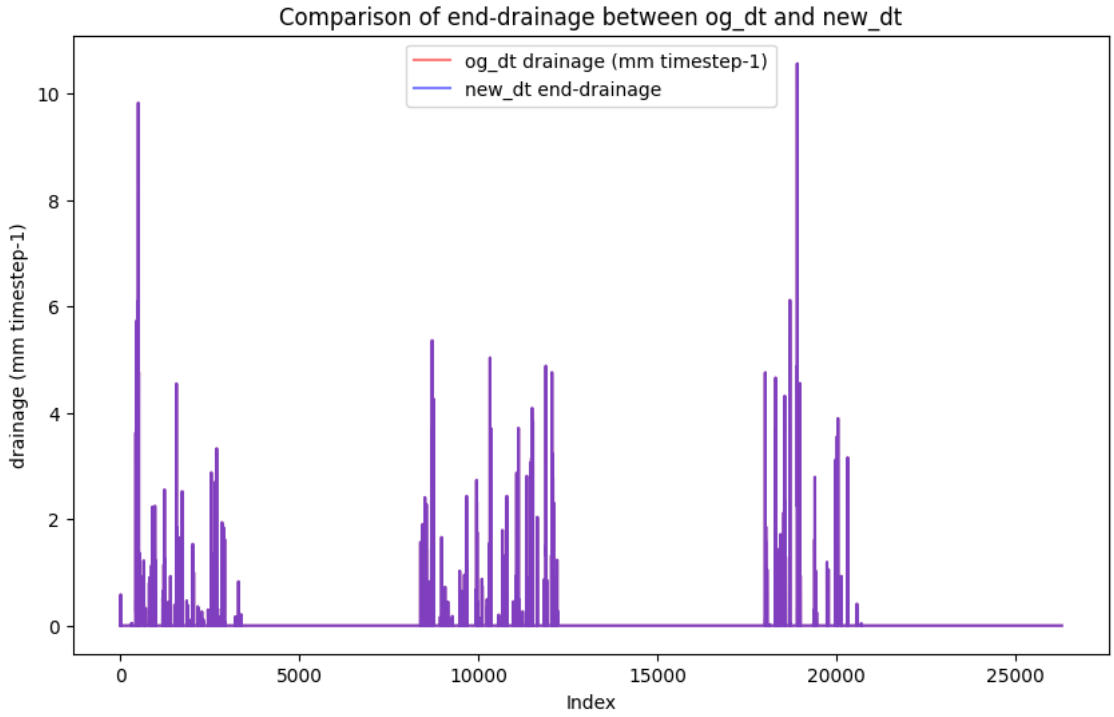


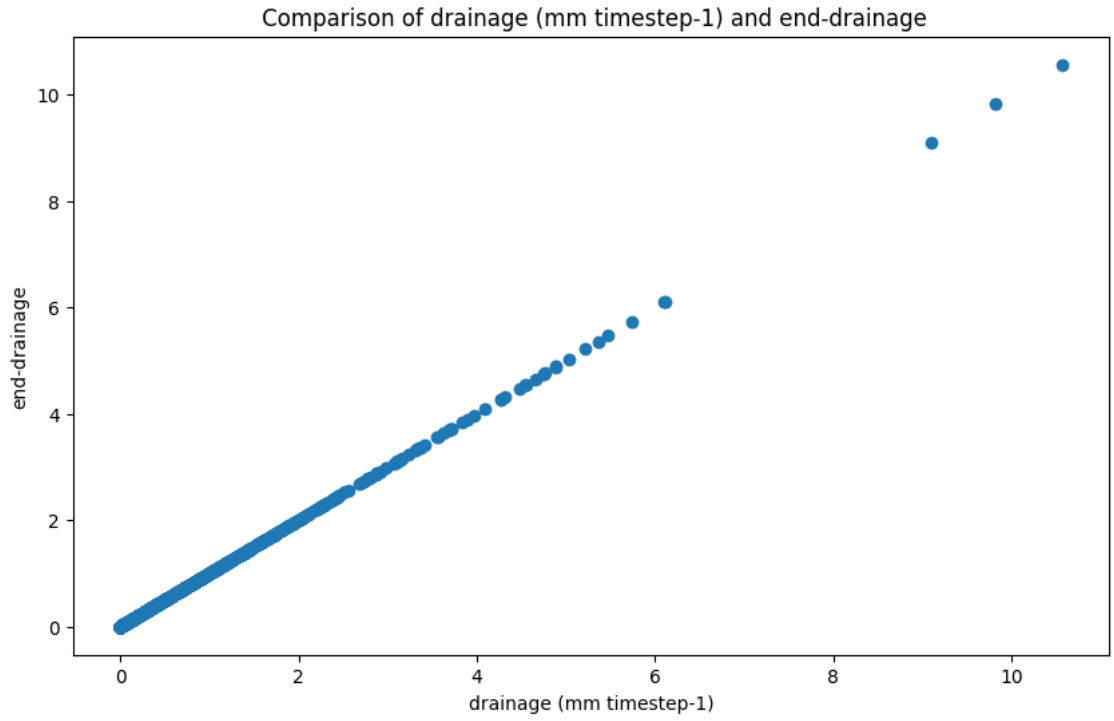
E (mm timestep-1)



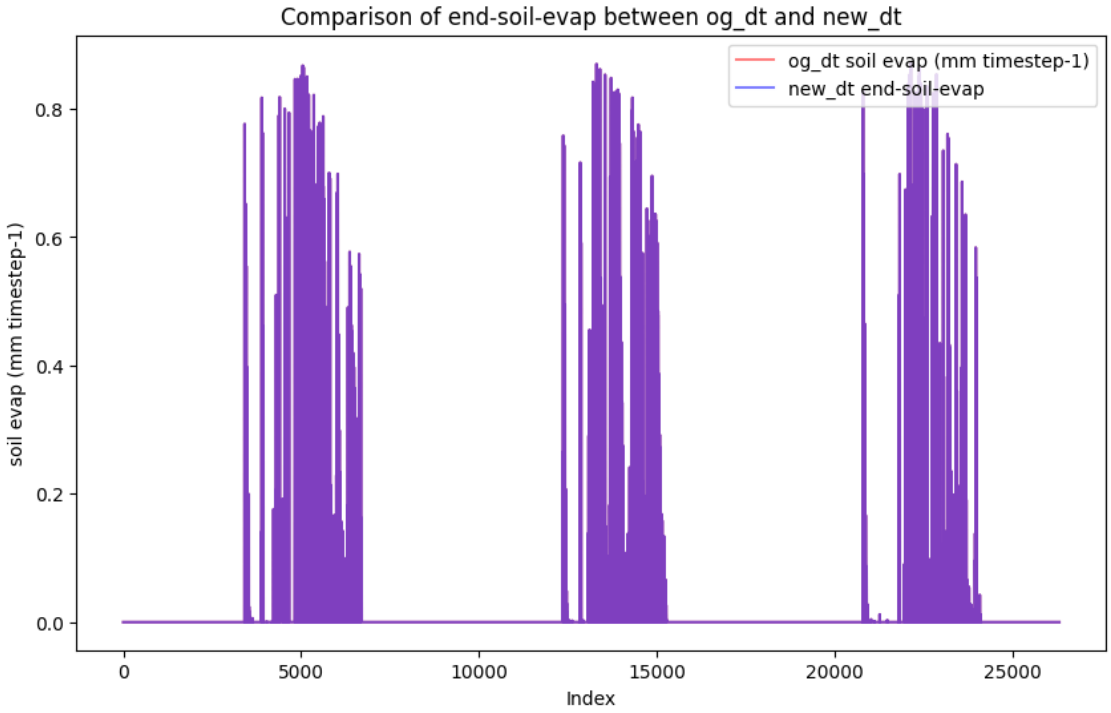


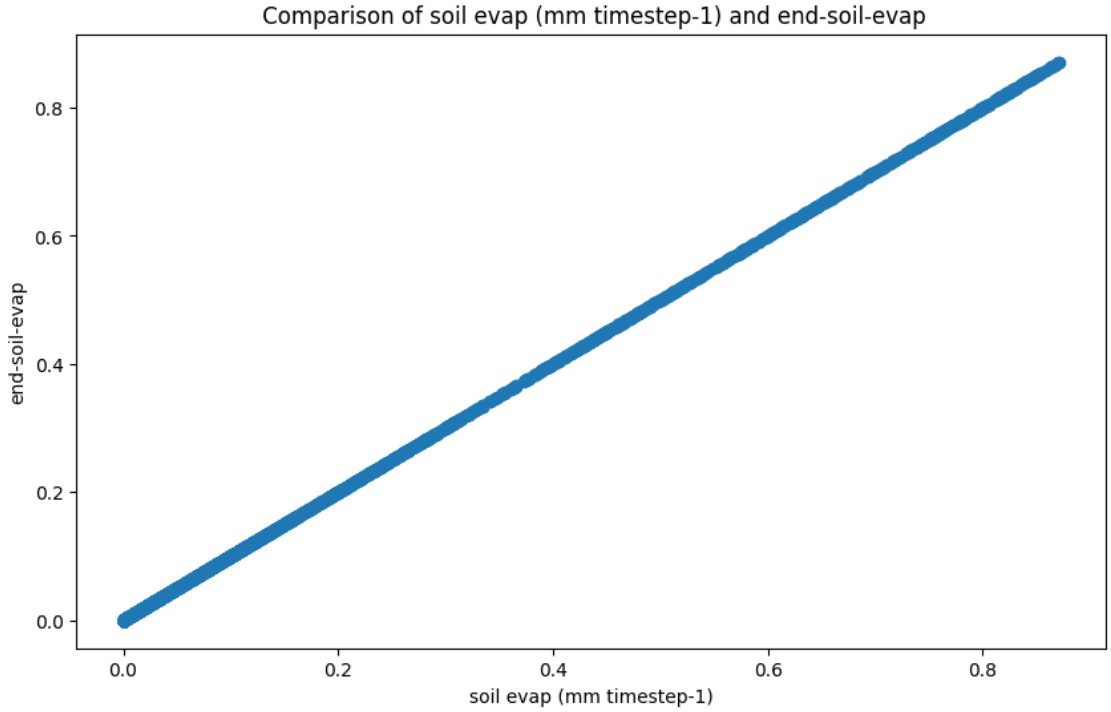
drainage (mm timestep-1)



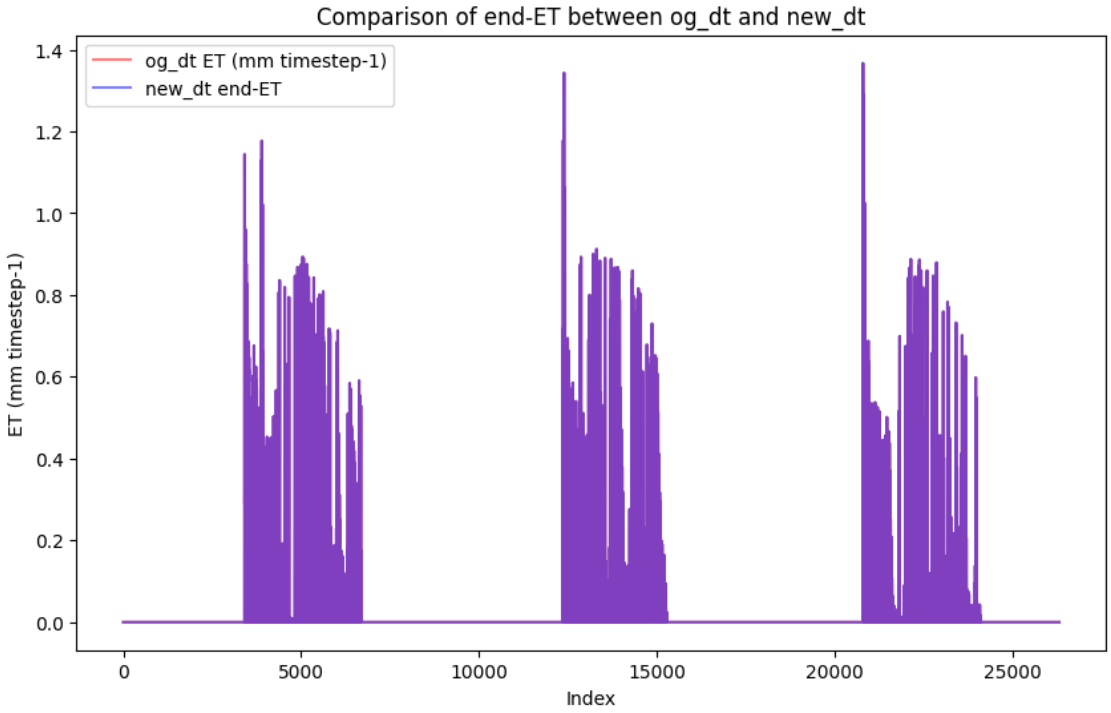


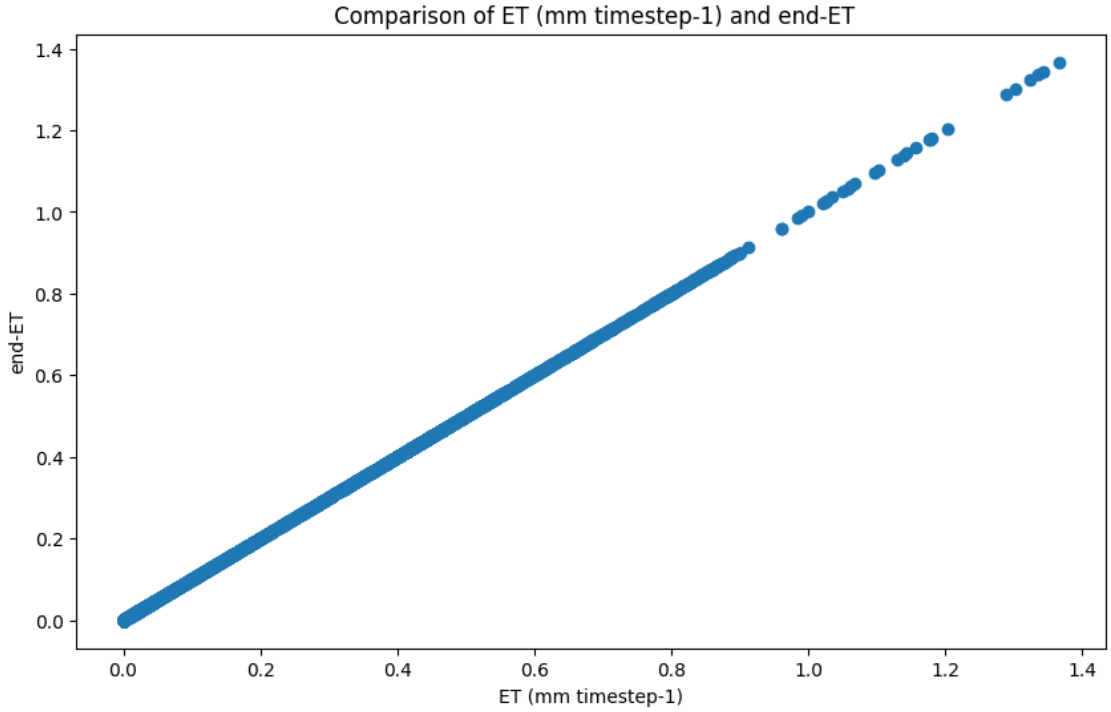
soil evap (mm timestep-1)



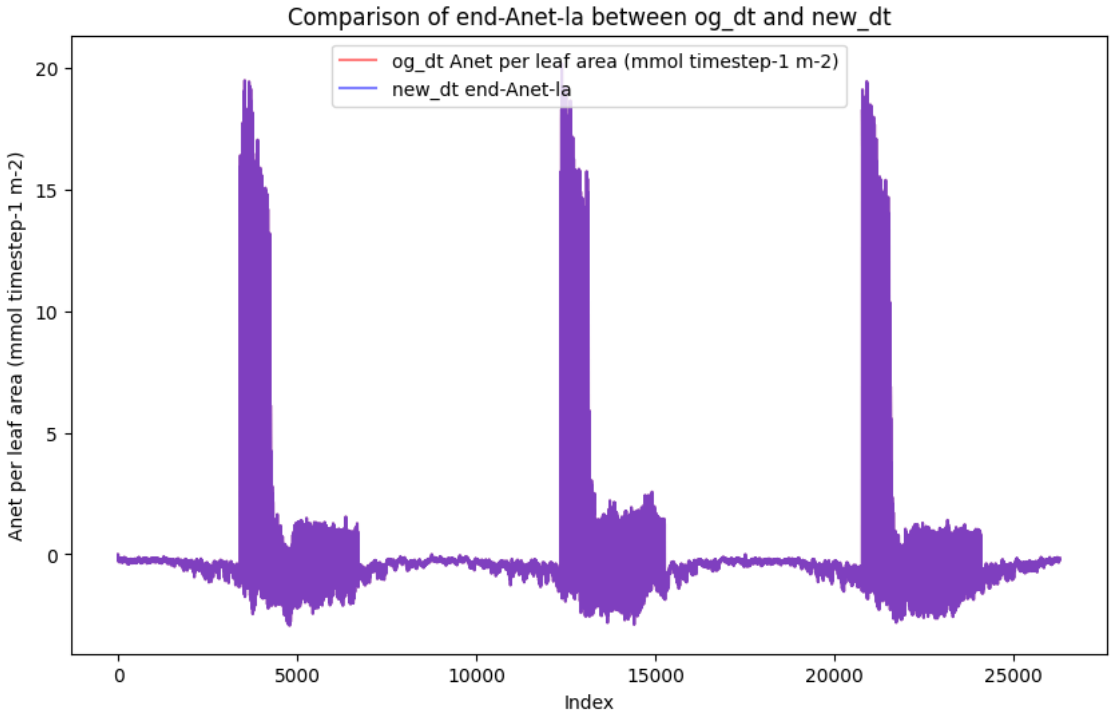


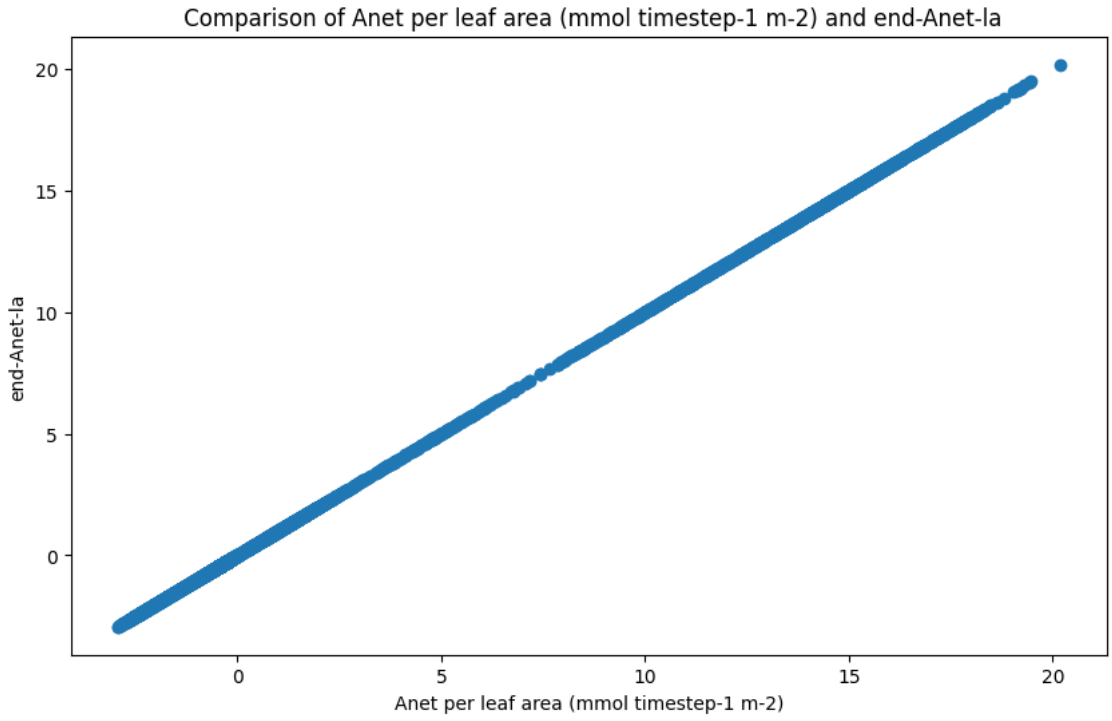
ET (mm timestep-1)



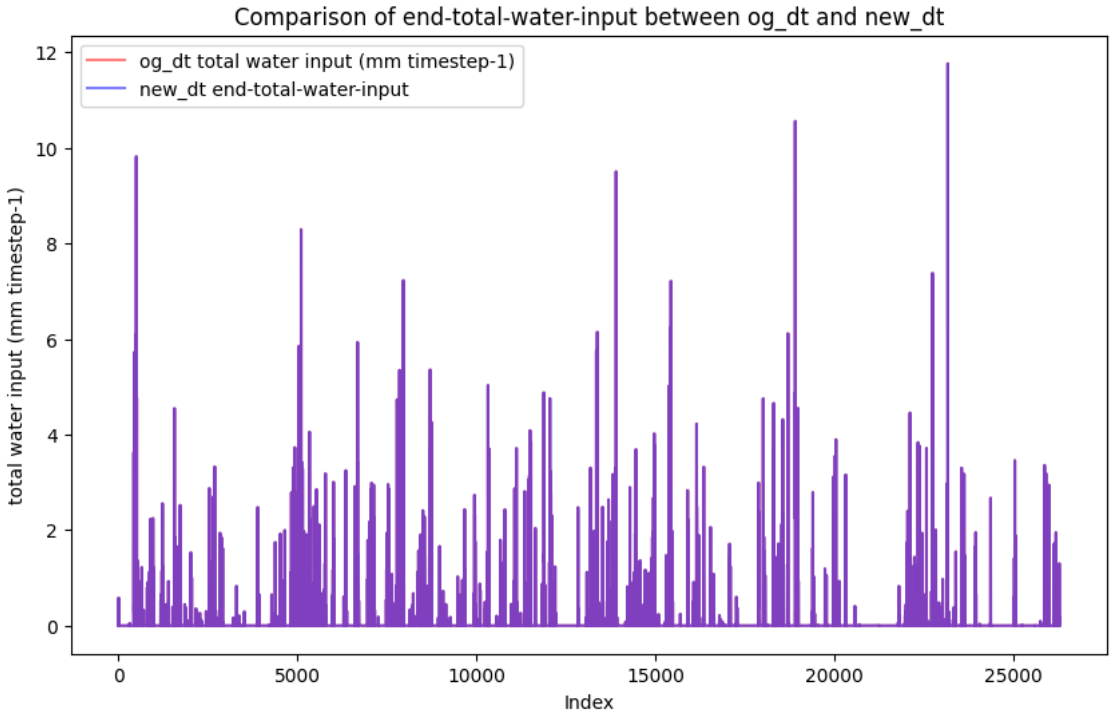


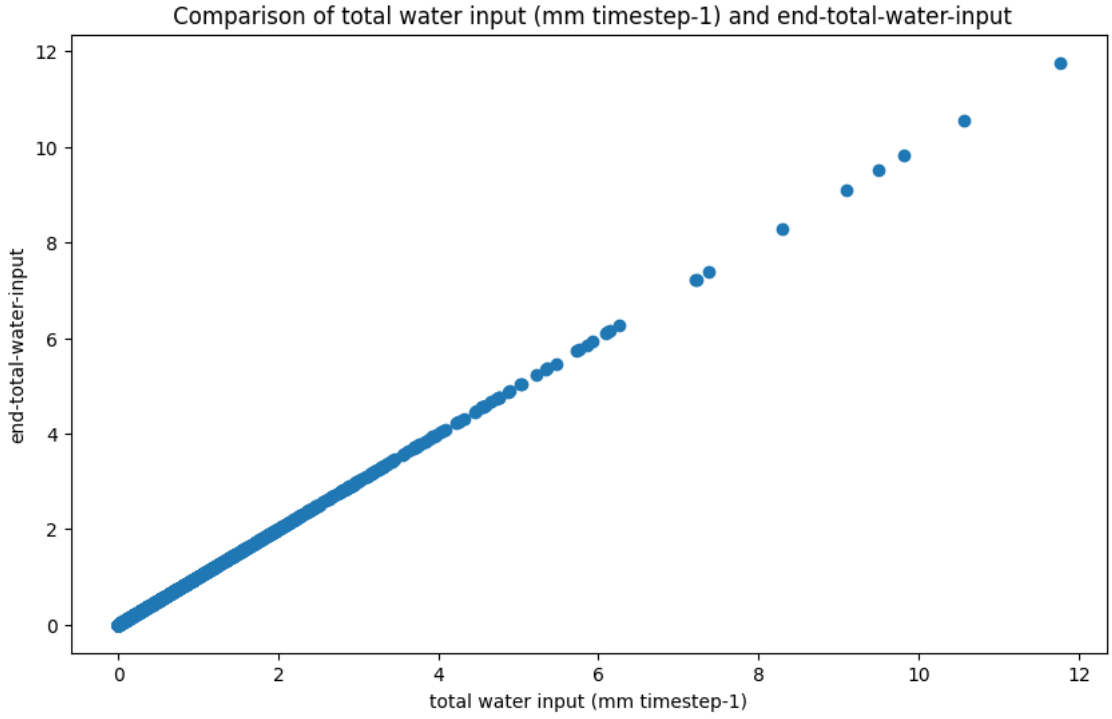
Anet per leaf area (mmol timestep-1 m-2)



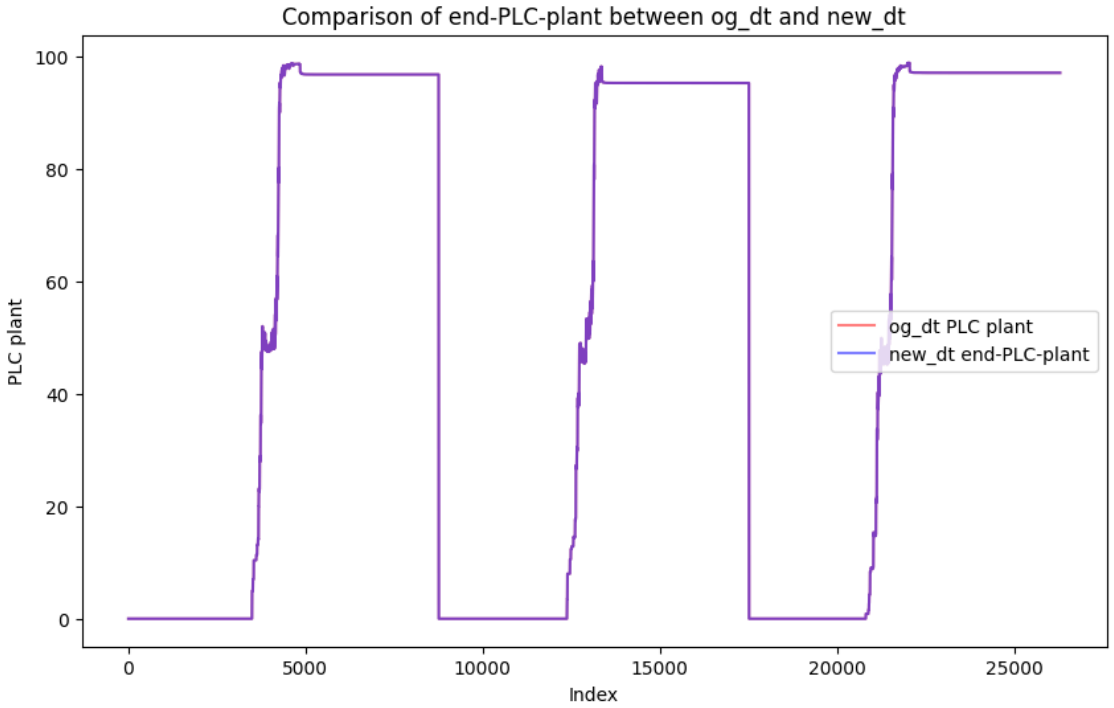


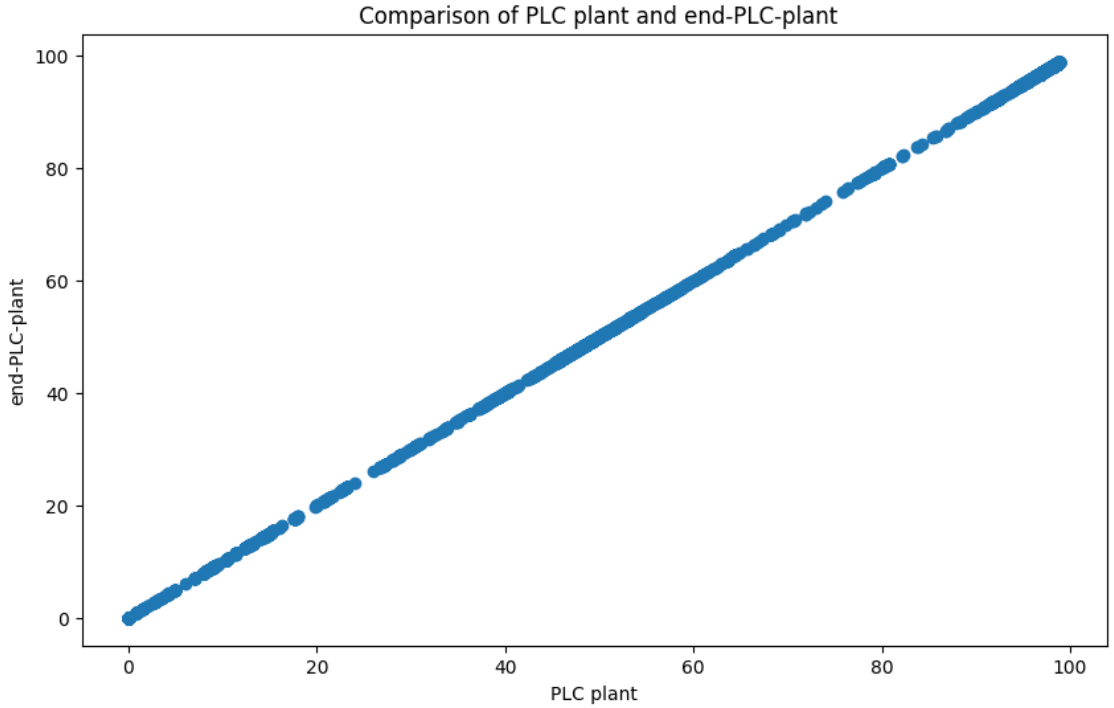
total water input (mm timestep-1)



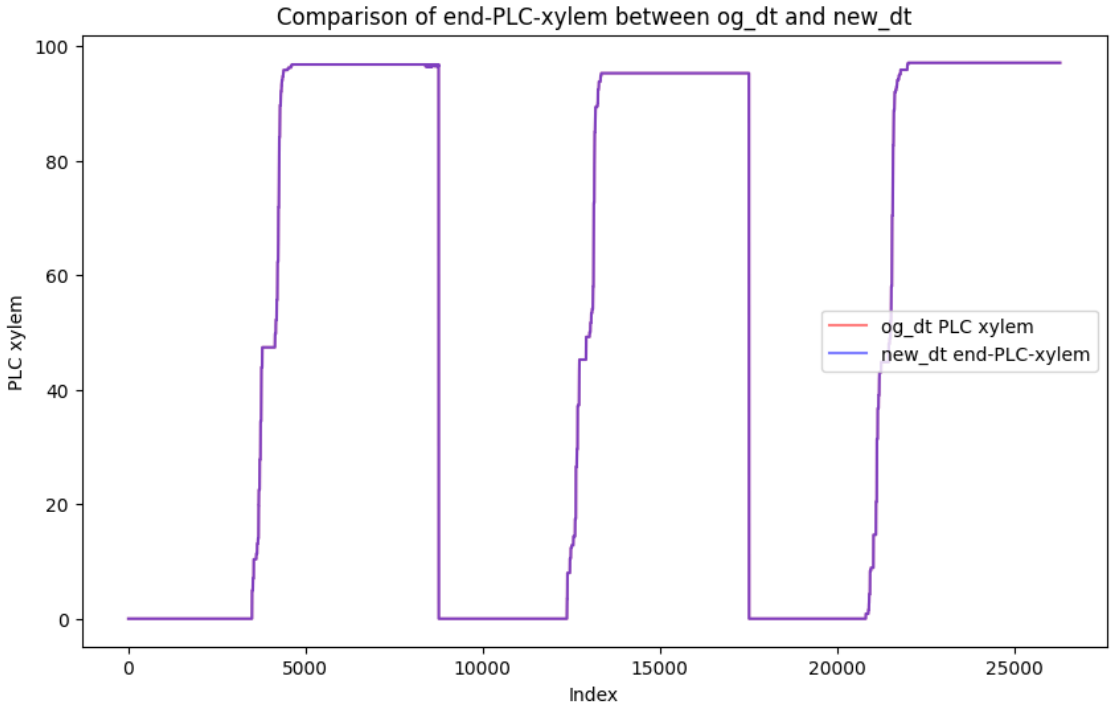


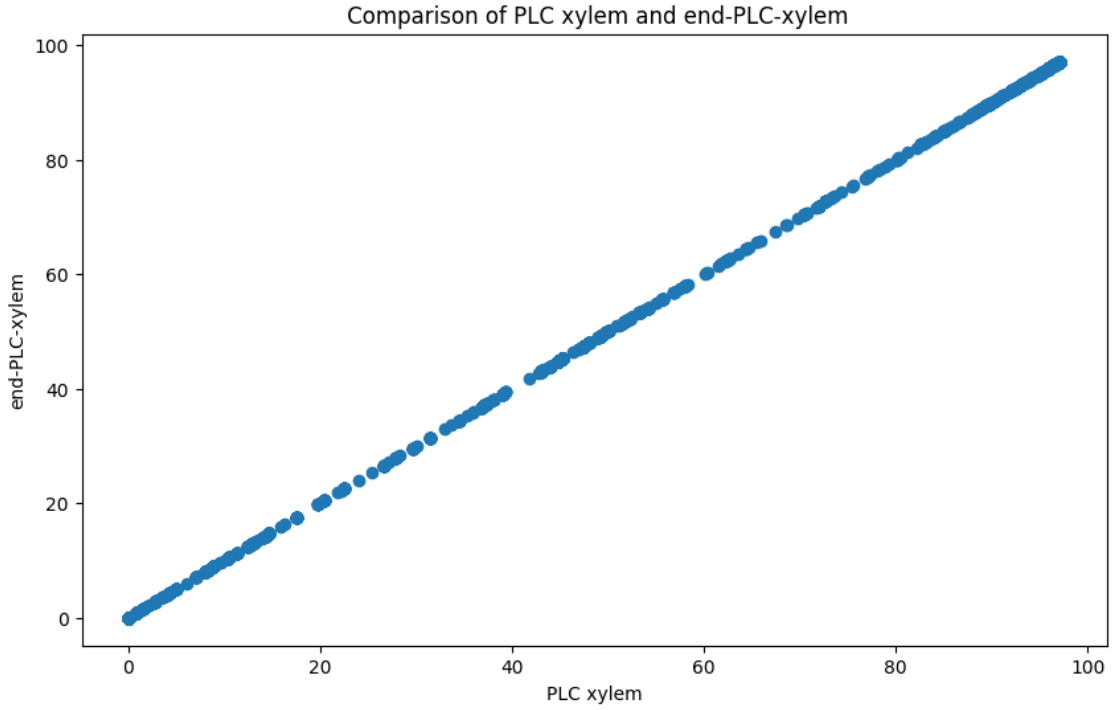
PLC plant


Comparison of end-PLC-plant between og_dt and new_dt
PLC plant
Index
og_dt PLC plant
new_dt end-PLC-plant
0
20
40
60
80
100
0
5000
10000
15000
20000
25000


Comparison of PLC plant and end-PLC-plant
end-PLC-plant
PLC plant
0
20
40
60
80
100

PLC xylem


Comparison of end-PLC-xylem between og_dt and new_dt
PLC xylem
Index
og_dt PLC xylem
new_dt end-PLC-xylem
0
20
40
60
80
100
0
5000
10000
15000
20000
25000


Comparison of PLC xylem and end-PLC-xylem
end-PLC-xylem
PLC xylem
0
20
40
60
80
100

runoff (mm timestep-1)