control_experiment_5G_A2_totals

May 29, 2025

[1]:
```
import importlib
import src.plots

importlib.reload(src.plots)
```

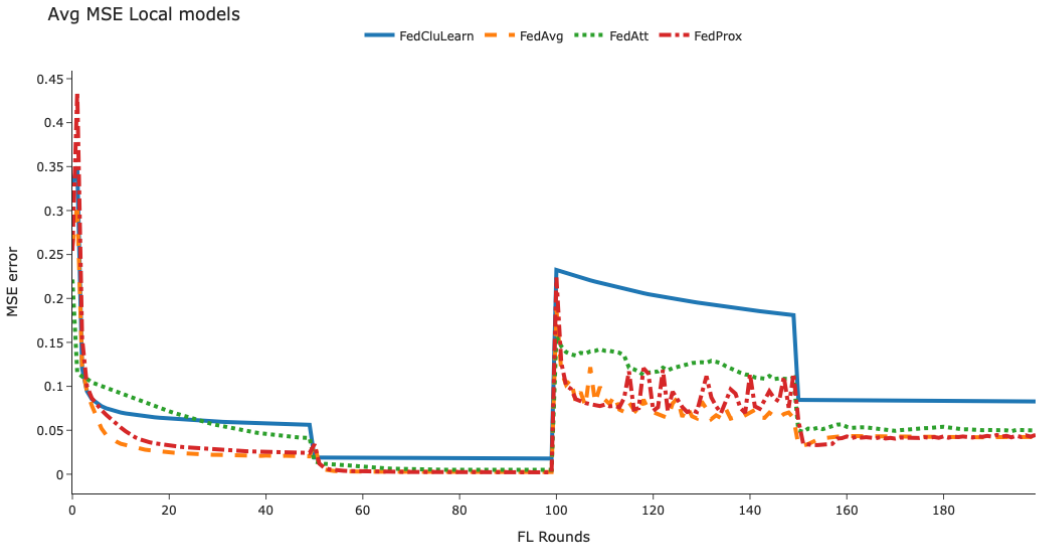
[1]:
```
<module 'src.plots' from '/Users/milenaangelova/git-repo/FedClust/src/plots.py'>
```

[2]:
```
from src.plots import plot_plotly, preprocessing_results
```

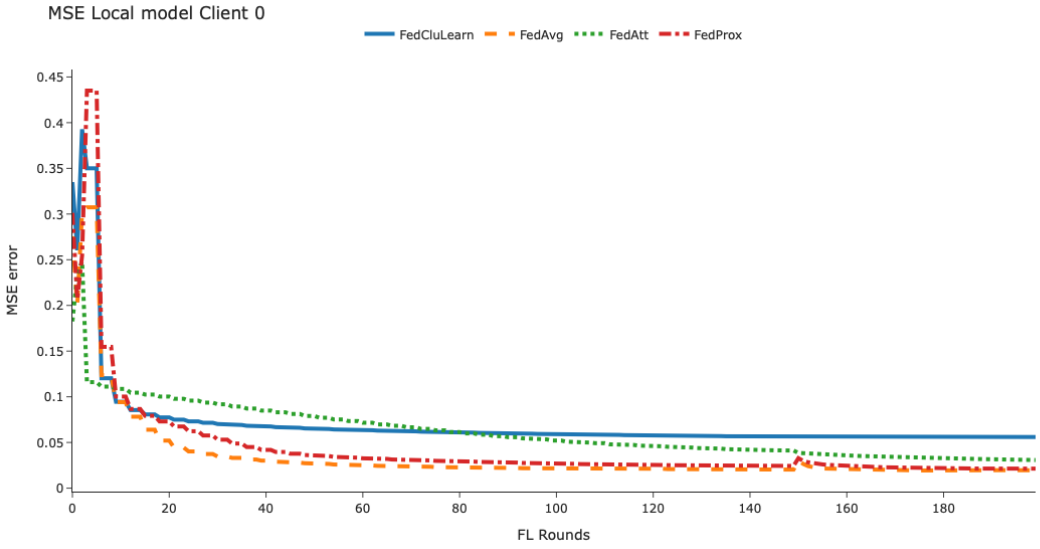
[3]:
```
# experiment 1, local epochs 3 local concept drift
local_FedCluLearn = 'results/results_FedCluLearn_2025-02-26 12:05:05.479940.txt'
global_FedCluLearn = 'results/global_model_evaluation_FedCluLearn_2025-02-26 12:
 ↪05:05.479940.txt'
local_FedAtt = 'results/results_FedAtt_2025-02-26 13:25:19.867217.txt'
global_FedAtt = 'results/global_model_evaluation_FedAtt_2025-02-26 13:25:19.
 ↪867217.txt'
local_FedProx = 'results/results_FedProx_2025-02-26 13:25:13.689653.txt'
global_FedProx = 'results/global_model_evaluation_FedProx_2025-02-26 13:25:13.
 ↪689653.txt'
local_FedAvg = 'results/results_FedAvg_2025-02-26 13:29:55.229671.txt'
global_FedAvg = 'results/global_model_evaluation_FedAvg_2025-02-26 13:29:55.
 ↪229671.txt'
local_FedCluLearn_Prox = 'results/results_FedCluLearn_Prox_2025-02-26 13:29:34.
 ↪958705.txt'
global_FedCluLearn_Prox = 'results/
 ↪global_model_evaluation_FedCluLearn_Prox_2025-02-26 13:29:34.958705.txt'
```

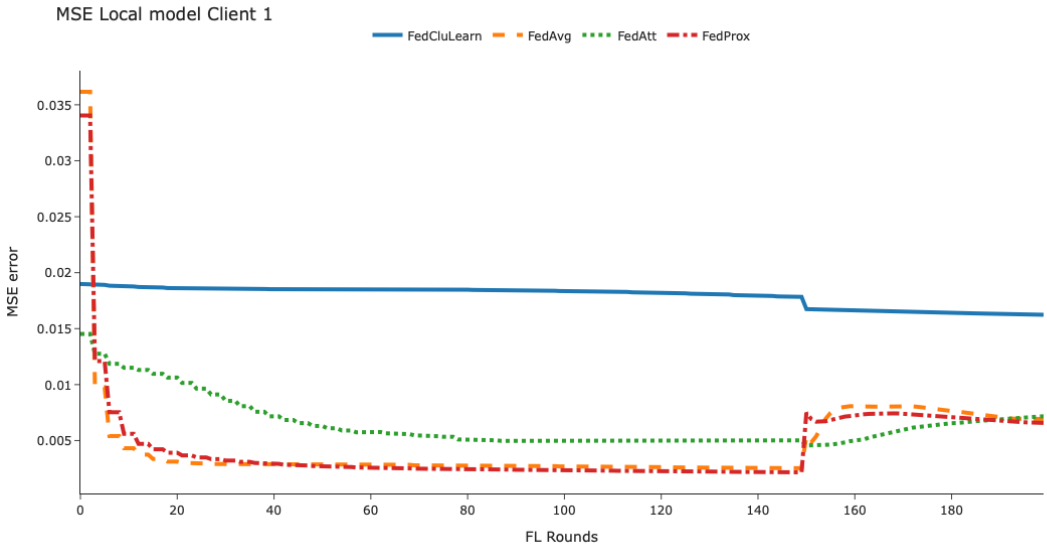
[4]:
```
local_filenames = [local_FedCluLearn, local_FedAvg, local_FedAtt,␣
 ↪local_FedProx, local_FedCluLearn_Prox]
global_filenames = [global_FedCluLearn, global_FedAvg, global_FedAtt,␣
 ↪global_FedProx, global_FedCluLearn_Prox]
```

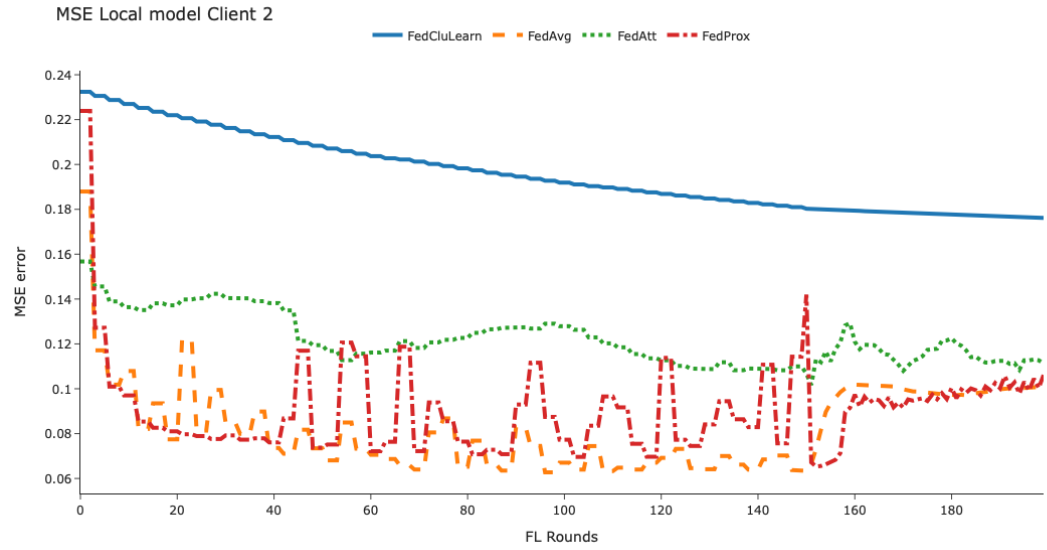
[5]:
```
mse_column = 'mse'
n_rounds, y = preprocessing_results(filenames=local_filenames,␣
 ↪mse_column=mse_column)
plot_plotly(n_rounds, y, title='Avg MSE Local models',␣
 ↪y_axis_title=f'{mse_column.upper()} error', y_axis_max=0.3)
```



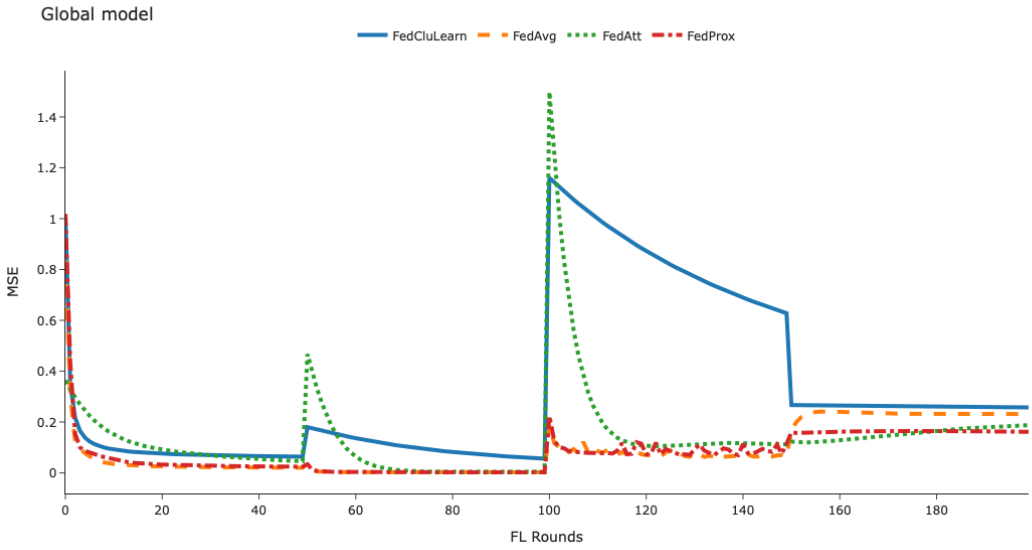
[6]:
```
for client_id in [0,1,2]:
    n_rounds, y = preprocessing_results(filenames=local_filenames,␣
 ↪client_id=client_id, mse_column='mse')
    plot_plotly(n_rounds, y, title=f'MSE Local model Client {client_id}',␣
 ↪y_axis_title='MSE error')
```



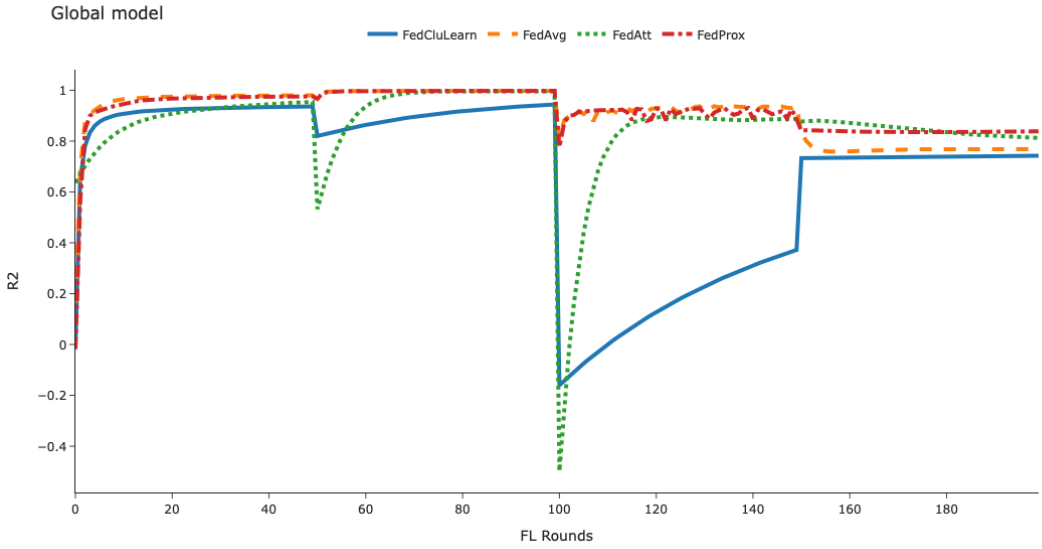




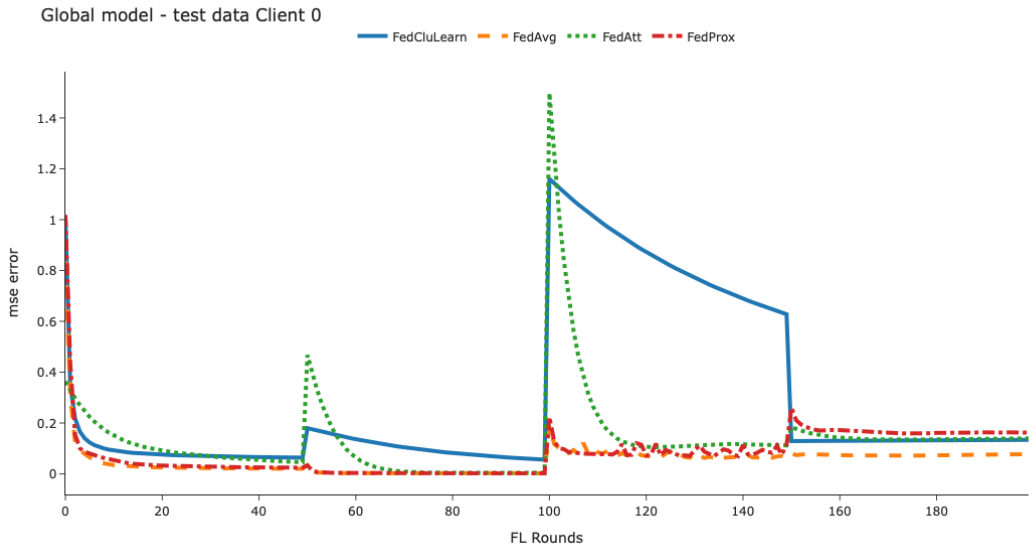
[7]:
```
mse_column = 'mse'
global_filenames = [global_FedCluLearn, global_FedAvg, global_FedAtt,␣
 ↪global_FedProx, global_FedCluLearn_Prox]
n_rounds, y = preprocessing_results(filenames=global_filenames,␣
 ↪mse_column=mse_column)
plot_plotly(n_rounds, y, title=f'Global model', y_axis_title=f'{mse_column.
 ↪upper()}', y_axis_max=1)
```

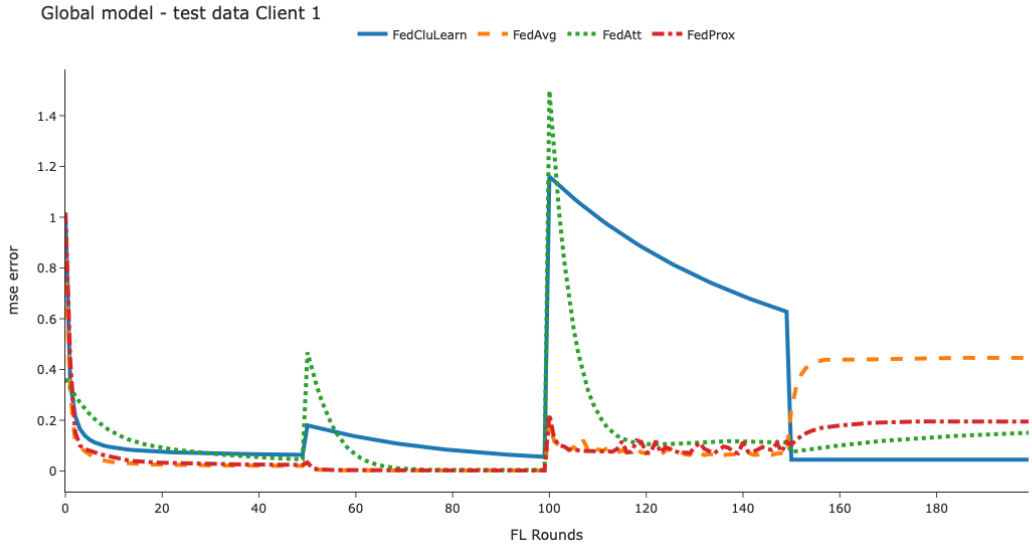


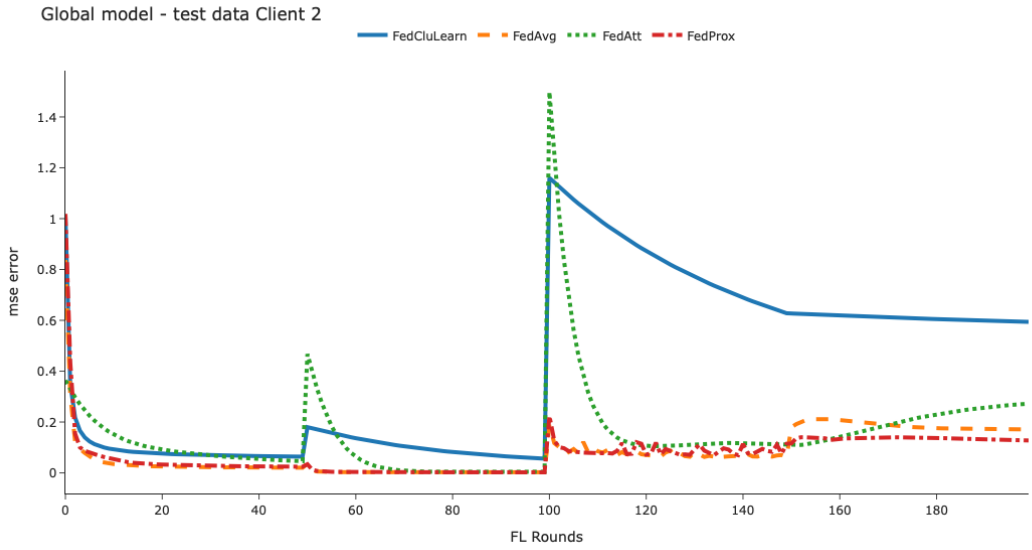
[14]:
```
mse_column = 'r2'
global_filenames = [global_FedCluLearn, global_FedAvg, global_FedAtt,␣
 ↪global_FedProx, global_FedCluLearn_Prox]
n_rounds, y = preprocessing_results(filenames=global_filenames,␣
 ↪mse_column=mse_column)
plot_plotly(n_rounds, y, title=f'Global model', y_axis_title=f'{mse_column.
 ↪upper()}', y_axis_max=1)
```



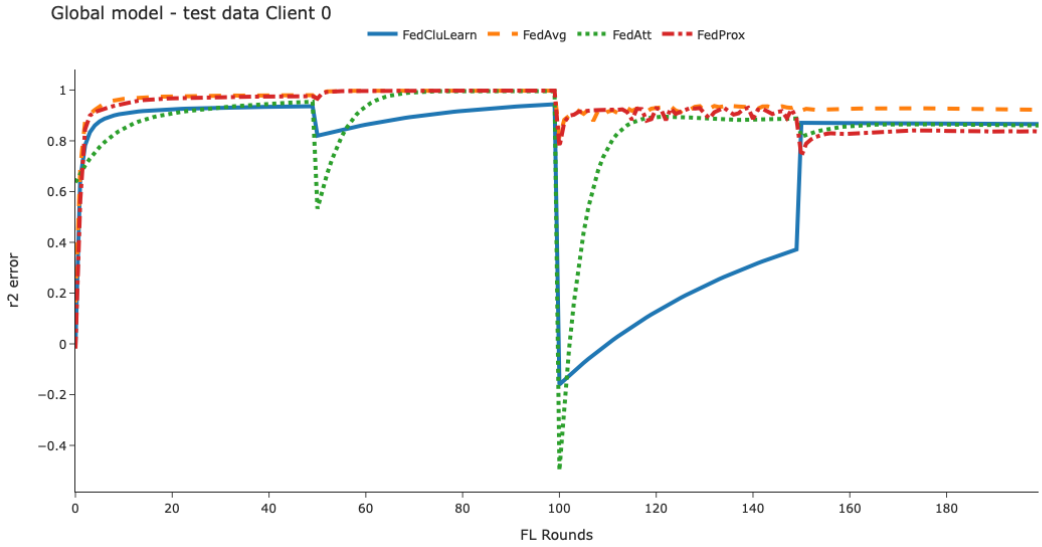
[9]:
```
mse_column='mse'
for client_id in [0,1,2]:
    n_rounds, y = preprocessing_results(filenames=global_filenames,␣
 ↪client_id=client_id,mse_column=mse_column)
    plot_plotly(n_rounds, y, title=f'Global model - test data Client␣
 ↪{client_id}', y_axis_title=f'{mse_column} error')
```

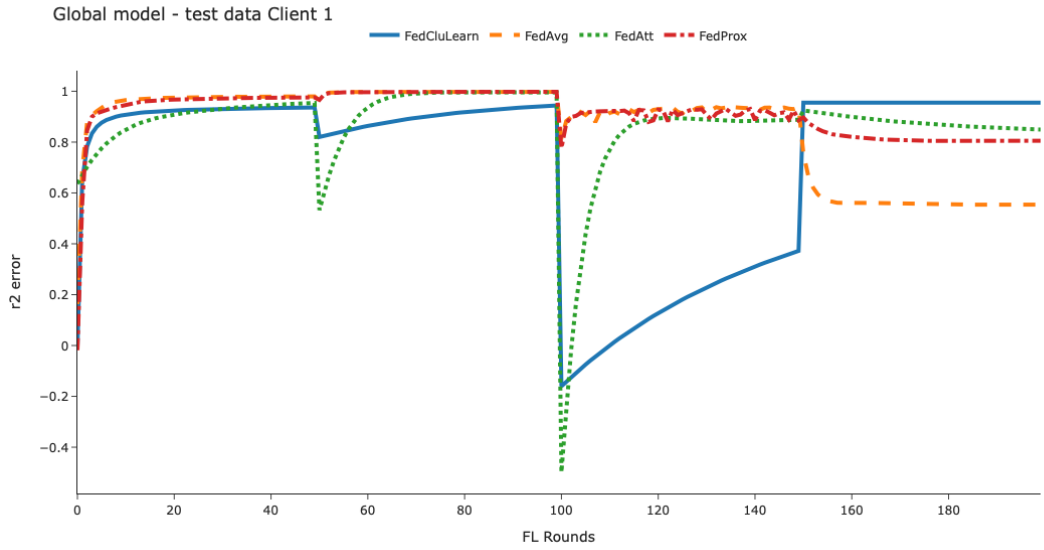


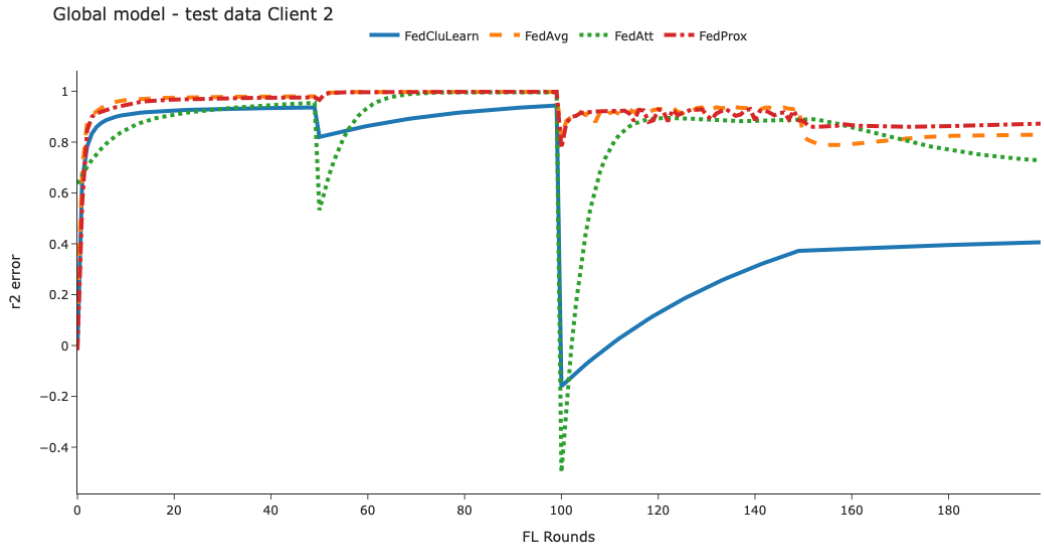




[10]:
```
mse_column='r2'
for client_id in [0,1,2]:
    n_rounds, y = preprocessing_results(filenames=global_filenames,␣
 ↪client_id=client_id,mse_column=mse_column)
    plot_plotly(n_rounds, y, title=f'Global model - test data Client␣
 ↪{client_id}', y_axis_title=f'{mse_column} error')
```







[11]:
```
mse_column='mse'
for client_id in [0,1,2]:
    n_rounds, y = preprocessing_results(filenames=[local_FedCluLearn,␣
 ↪global_FedCluLearn, None, None, None],␣
 ↪client_id=client_id,mse_column=mse_column)
```

```
    plot_plotly(n_rounds, y, title=f'Local vs Global Client {client_id}',␣
 ↪y_axis_title=f'{mse_column} error', algo_name1='Local FedCluLearn',␣
 ↪algo_name4='Global FedCluLearn')
```

[12]:
```
local_FedCluLearn_070 = 'results/results_FedCluLearn_2025-03-04 10:42:21.373624.
 ↪txt'
global_FedCluLearn_070 = 'results/
 ↪global_model_evaluation_FedCluLearn_2025-03-04 10:42:21.373624.txt'
local_FedCluLearn_080 = 'results/results_FedCluLearn_2025-03-04 10:43:06.616600.
 ↪txt'
global_FedCluLearn_080 = 'results/
 ↪global_model_evaluation_FedCluLearn_2025-03-04 10:43:06.616600.txt'
local_FedCluLearn_090 = 'results/results_FedCluLearn_2025-03-04 11:28:42.427780.
 ↪txt'
global_FedCluLearn_090 = 'results/
 ↪global_model_evaluation_FedCluLearn_2025-03-04 11:28:42.427780.txt'
local_FedCluLearn_Prox_070 = 'results/results_FedCluLearn_Prox_2025-03-04 11:29:
 ↪08.539834.txt'
global_FedCluLearn_Prox_070 = 'results/
 ↪global_model_evaluation_FedCluLearn_Prox_2025-03-04 11:29:08.539834.txt'
local_FedCluLearn_Prox_080 = 'results/results_FedCluLearn_Prox_2025-03-04 11:30:
 ↪23.357036.txt'
global_FedCluLearn_Prox_080 = 'results/
 ↪global_model_evaluation_FedCluLearn_Prox_2025-03-04 11:30:23.357036.txt'
local_FedCluLearn_Prox_090 = 'results/results_FedCluLearn_Prox_2025-03-04 11:30:
 ↪29.815623.txt'
global_FedCluLearn_Prox_090 = 'results/
 ↪global_model_evaluation_FedCluLearn_Prox_2025-03-04 11:30:29.815623.txt'
```

[13]:
```
mse_column = 'mse'
global_filenames = [global_FedCluLearn, global_FedCluLearn_070,␣
 ↪global_FedCluLearn_080, global_FedCluLearn_090]
n_rounds, y = preprocessing_results(filenames=global_filenames,␣
 ↪mse_column=mse_column)
plot_plotly(n_rounds, y, title=f'', y_axis_title=f'{mse_column.upper()} error',␣
 ↪y_axis_max=1, algo_name1 = '0.5', algo_name4='0.7', algo_name5='0.8',␣
 ↪algo_name6='0.9')
```