

## control\_experiment\_5G\_A1\_totals

May 29, 2025

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

importlib.reload(src.plots)

[12]: <module 'src.plots' from '/Users/milenaangelova/git-
repo/FedCluLearn/src/plots.py'>

[13]: from src.plots import plot_plotly, preprocessing_results

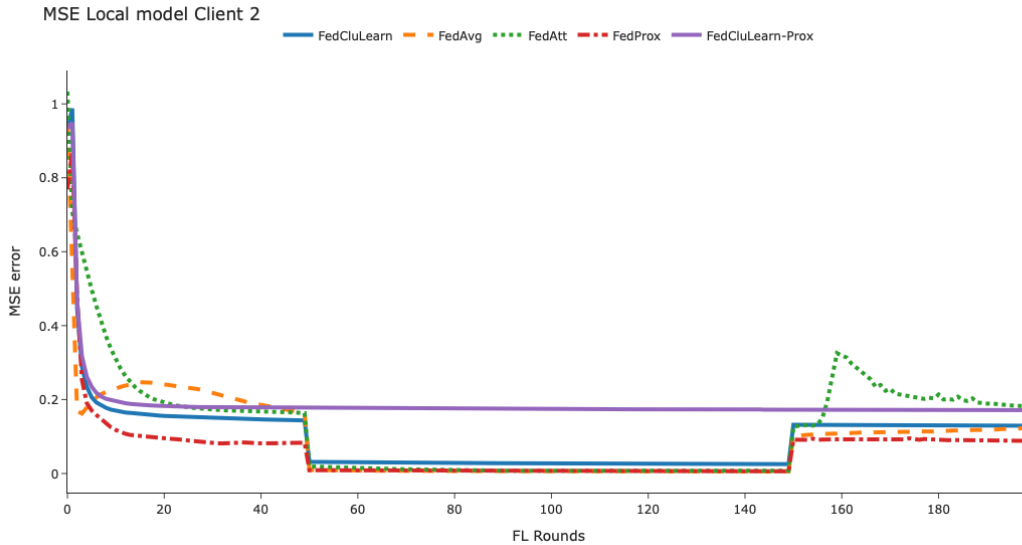
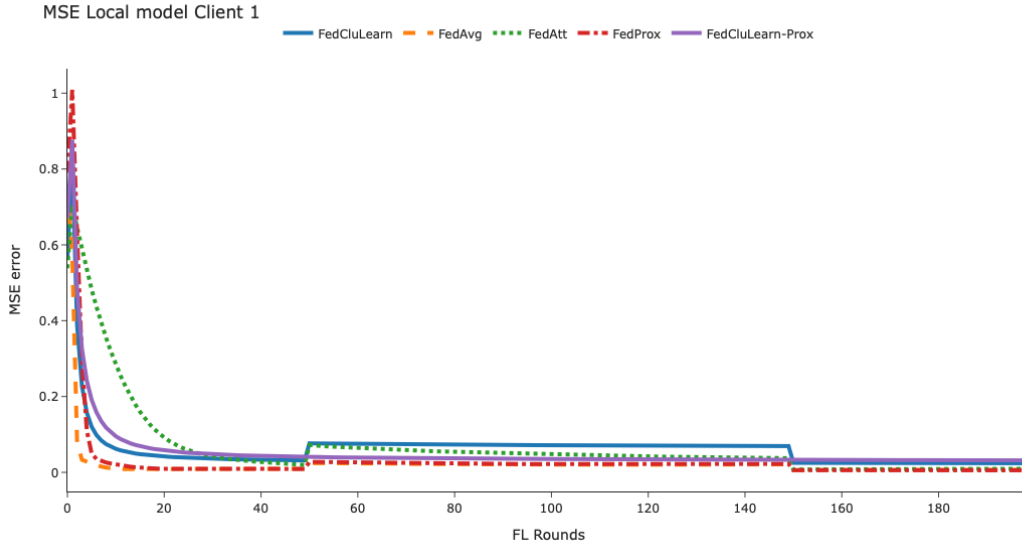
[14]: # experiment 1, local epochs 3 local concept drift
local_FedCluLearn = 'results/results_FedCluLearn_2025-02-05 11:02:47.756245.txt'
global_FedCluLearn = 'results/global_model_evaluation_FedCluLearn_2025-02-05 11:
↪02:47.756245.txt'
local_FedAvg = 'results/results_FedAvg_2025-02-05 11:02:59.570648.txt'
global_FedAvg = 'results/global_model_evaluation_FedAvg_2025-02-05 11:02:59.
↪570648.txt'
local_FedAtt = 'results/results_FedAtt_2025-02-15 14:24:24.188745.txt'
global_FedAtt = 'results/global_model_evaluation_FedAtt_2025-02-15 14:24:24.
↪188745.txt'
local_FedProx = 'results/results_FedProx_2025-02-16 08:55:52.957901.txt'
global_FedProx = 'results/global_model_evaluation_FedProx_2025-02-16 08:55:52.
↪957901.txt'
local_FedCluLearn_Prox = 'results/results_FedCluLearn_Prox_2025-02-26 12:05:46.
↪452219.txt'
global_FedCluLearn_Prox = 'results/
↪global_model_evaluation_FedCluLearn_Prox_2025-02-26 12:05:46.452219.txt'

[15]: 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]

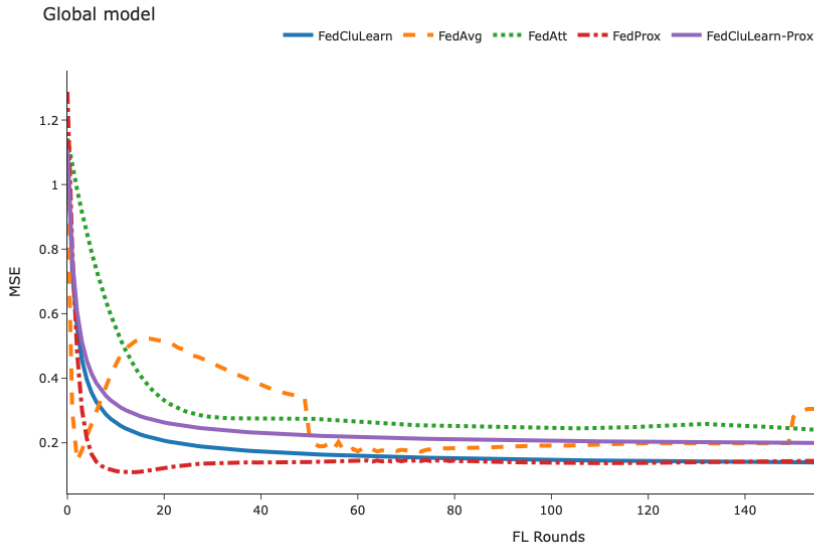
[16]: mse_column = 'mse'
n_rounds, y = preprocessing_results(filenamees=local_filenames, ↵
↪mse_column=mse_column)
```

```
plot_plotly(n_rounds, y, title='Avg MSE Local models',
            y_axis_title=f'{mse_column.upper()} error', y_axis_max=0.3)
```

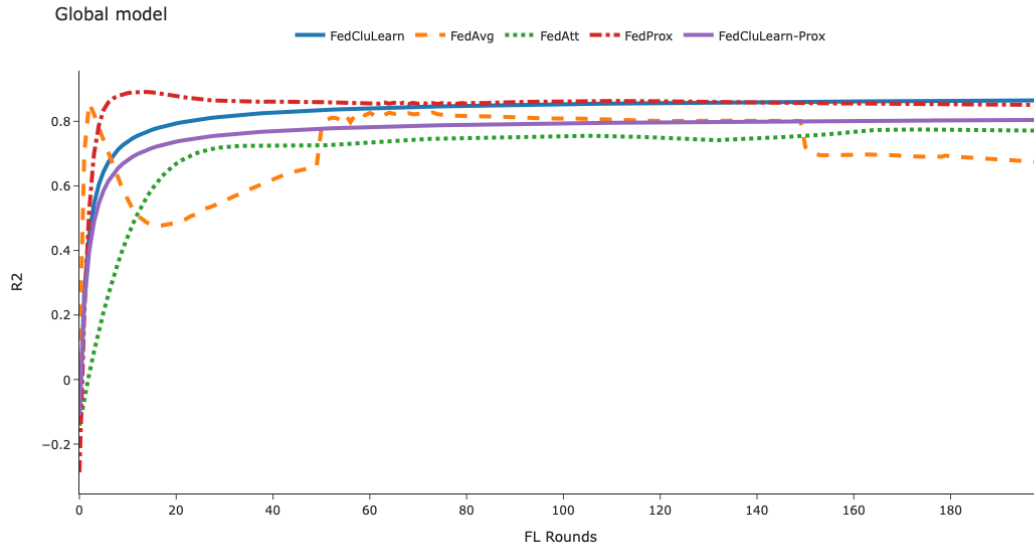
```
[17]: for client_id in [0,1,2]:
        n_rounds, y = preprocessing_results(filename=local_filenames,
        client_id=client_id, mse_column='mse')
        plot_plotly(n_rounds, y, title=f'MSE Local model Client {client_id}',
        y_axis_title='MSE error')
```



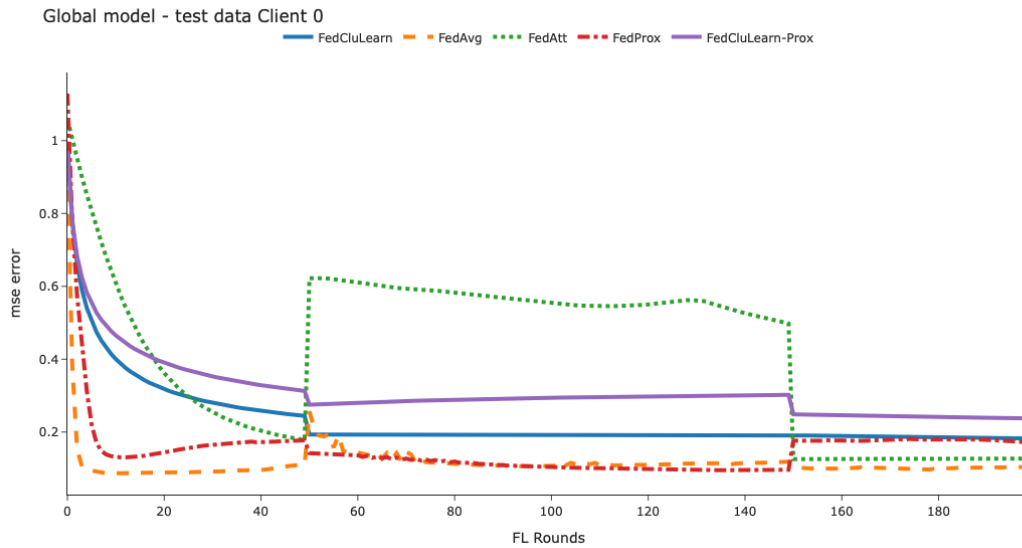
```
[18]: mse_column = 'mse'
# n_rounds, y = preprocessing_results(filenamees=[global_FedCluLearn,
# ↪ global_FedCluLearn_recent, global_FedCluLearn_percentage, global_FedAvg,
# ↪ global_FedAtt, global_FedProx, global_FedCluLearn_Prox,
# ↪ global_FedCluLearn_Prox_recent, None], mse_column=mse_column)
# global_filenames = [global_FedCluLearn, global_FedAvg, global_FedAtt,
# ↪ global_FedProx, global_FedCluLearn_Prox]
global_filenames = [global_FedCluLearn, global_FedAvg, global_FedAtt,
# ↪ global_FedProx, global_FedCluLearn_Prox]
n_rounds, y = preprocessing_results(filenamees=global_filenames,
# ↪ mse_column=mse_column)
# Avg {mse_column.upper()} Global model
plot_plotly(n_rounds, y, title=f'Global model', y_axis_title=f'{mse_column.
# ↪ upper()}', y_axis_max=1)
```

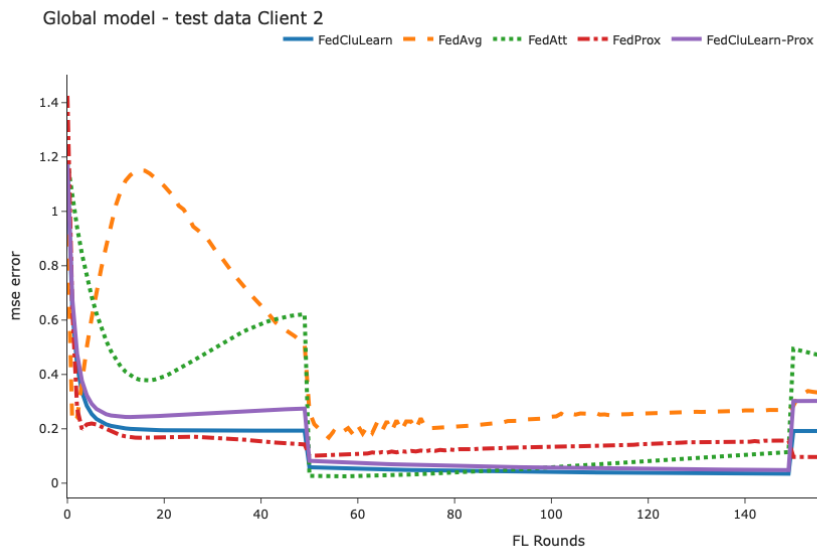
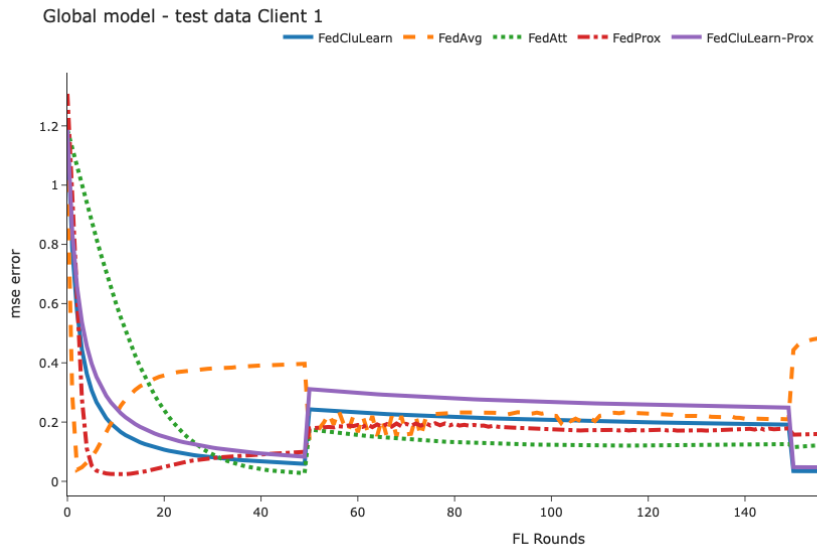


```
[19]: mse_column = 'r2'
global_filenames = [global_FedCluLearn, global_FedAvg, global_FedAtt,
# ↪ global_FedProx, global_FedCluLearn_Prox]
n_rounds, y = preprocessing_results(filenamees=global_filenames,
# ↪ mse_column=mse_column)
plot_plotly(n_rounds, y, title=f'Global model', y_axis_title=f'{mse_column.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

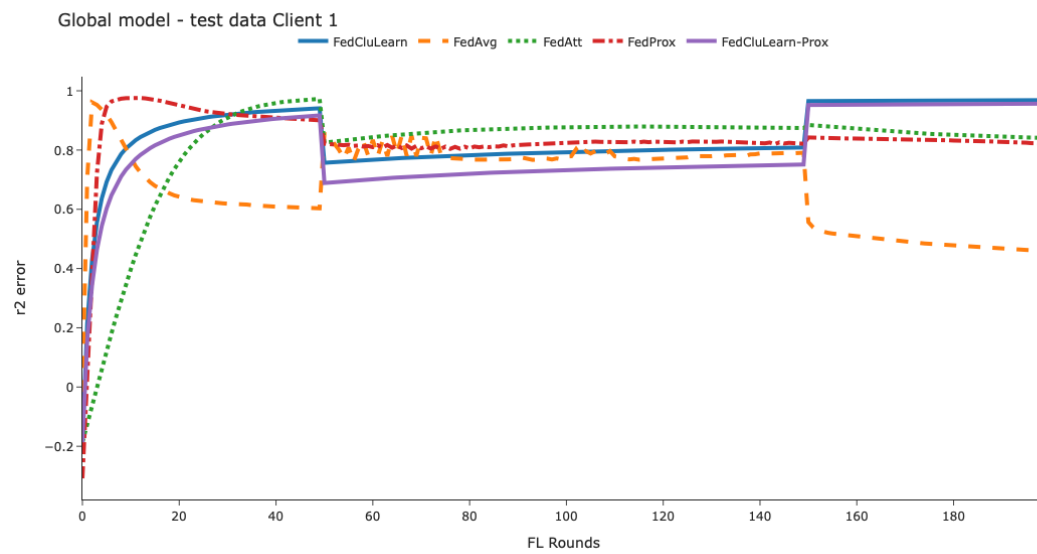
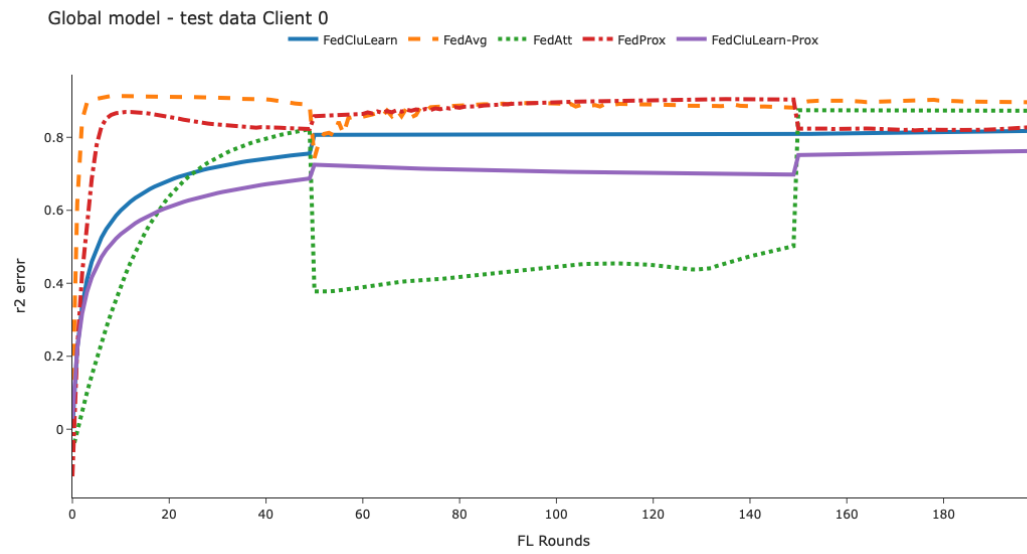


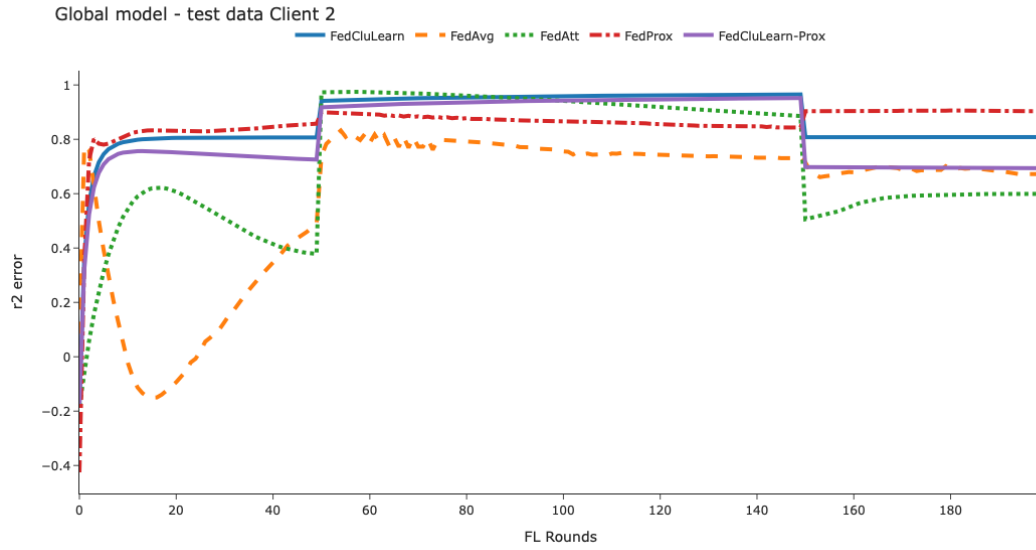
```
[20]: mse_column='mse'
for client_id in [0,1,2]:
    n_rounds, y = preprocessing_results(filenamees=global_filenames,
    ↪ client_id=client_id,mse_column=mse_column)
    plot_plotly(n_rounds, y, title=f'Global model - test data Client_
    ↪ {client_id}', y_axis_title=f'{mse_column} error')
```



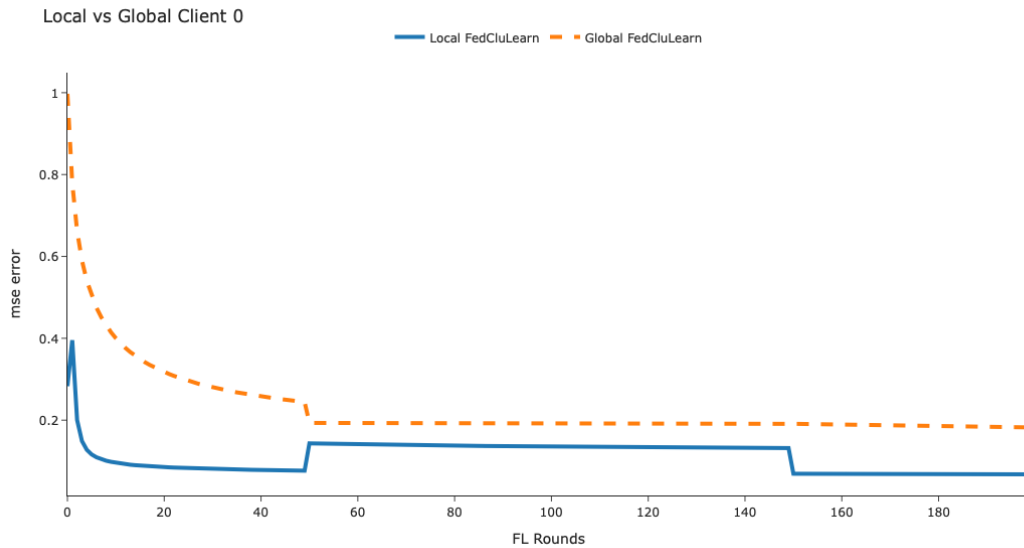


```
[21]: mse_column='r2'
for client_id in [0,1,2]:
    n_rounds, y = preprocessing_results(filenamees=global_filenames,
    ↪ client_id=client_id,mse_column=mse_column)
    plot_plotly(n_rounds, y, title=f'Global model - test data Client_
    ↪ {client_id}', y_axis_title=f'{mse_column} error')
```

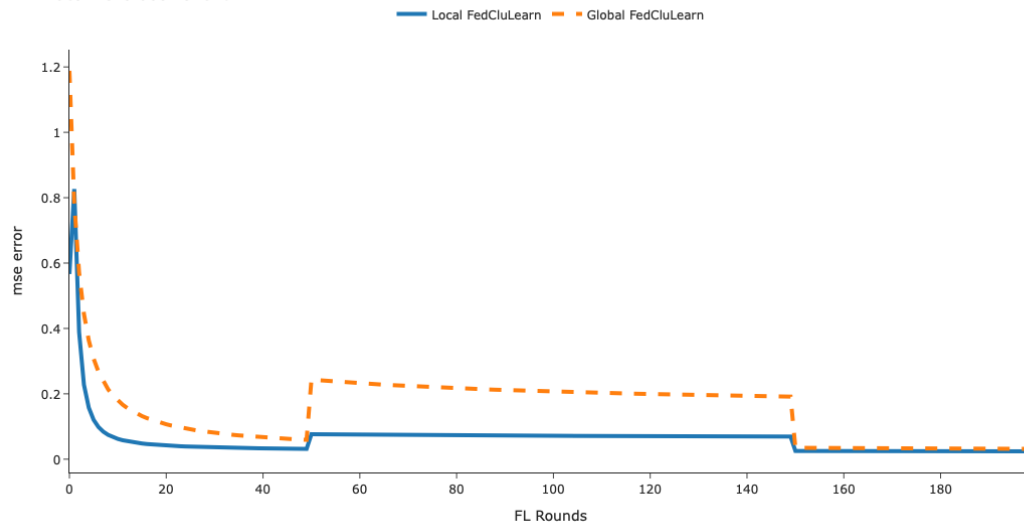




```
[22]: mse_column='mse'
for client_id in [0,1,2]:
    n_rounds, y = preprocessing_results(filenamees=[local_FedCluLearn,
    ↪ global_FedCluLearn, None, None, None],
    ↪ client_id=client_id,mse_column=mse_column)
    plot_plotly(n_rounds, y, title=f'Local vs Global Client {client_id}',
    ↪ y_axis_title=f'{mse_column} error', algo_name1='Local FedCluLearn',
    ↪ algo_name4='Global FedCluLearn')
```



Local vs Global Client 1



Local vs Global Client 2

