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1 import numpy as np
2 from itertools import product
3
4
5 def run_simulation_experiment(signal, regressors, N=250, N_trials=500, sd=0.1):
6     trials = run_trials(signal, regressors, N, N_trials, sd)
7
8     def make_mean_errors(trials):
9         train_mean_errors = trials[0].mean(axis=0)
10        test_mean_errors = trials[1].mean(axis=0)
11        return train_mean_errors, test_mean_errors
12
13    def make_standard_errors(trials):
14        train_standard_errors = trials[0].std(axis=0)
15        test_standard_errors = trials[1].std(axis=0)
16        return train_standard_errors, test_standard_errors
17
18    mean_errors = make_mean_errors(trials)
19    standard_errors = make_standard_errors(trials)
20    return mean_errors, standard_errors
21
22 def plot_simulation_experiment(ax, degrees_of_freedom, mean_errors, std_errors):
23     train_me, test_me = mean_errors
24     train_se, test_se = std_errors
25     train_top_band, train_bottom_band = train_me + train_se, train_me - train_se
26     test_top_band, test_bottom_band = test_me + test_se, test_me - test_se
27
28     ax.plot(degrees_of_freedom, train_me, label="Train")
```