mre Documentation

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CONTENTS:

proposal_function_definition.**mr_estimator**(*activity_matrix*, *k_limits*, *bootstrapping=False*, *fitting_function=None*, *method_slopes=None*, *subtr_trial_avg=False*, *perform_statistical_tests=False*, *plot=None*)

Estimates the MR Estimator from the activity matrix

Parameters

- **activity_matrix** (*A (n,T)-shaped array*) – contains the activity which ones want to analyze. The first dimension denotes the trials, the second the time
- **bootstrapping** (*bool or int, optional*) – Number of times, m, bootstrapping samples are taken from the trials in order to get a distribution of the parameters. Defaults to False in which case no bootstrapping is performed.
- **fitting_function** (*{"exponential", "exponential_with_offset", "complex"}, optional*) – Name of the fitting function used to fit the correlation plot. Defaults to "exponential".
- **method_slopes** (*{"separate trials", "concatenate trials"}, optional*) – Whether to calculate the autocorrelation function over each trial, which induces a bias when the trial are too short (the default) or over the all trials, which leads to an offset when the activity is not constant.
- **subtr_trial_avg** (*bool, optional*) – whether to subtract the mean activity over the trials before calculating the autocorrelation plot.
- **perform_statistical_tests** (*bool, optional*) – whether to perform statistical tests to ensure the validity of the estimator. If the tests aren't passed, it raises a Error with the name of the test which wasn't passed.
- **plot** (*str, optional*) – path for autocorrelation plots to be saved.

Returns

- **estimated_parameters** (*A (w)-shaped array*) – The w estimated parameters of the fitted function. When fitting function is exponential: [m, A], exponential_with_offset: [m, A, O], complex: [.....]
- **bootstrapped_parameters** (*A (m, w)-shaped array*) – The resulting parameters of the bootstrapping. When bootstrapping is None, this return value is missing.

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