lensmcmc Code Structure

Configure a large numbers of simultaneous runs. Each run generates a mock observation according to the observation settings. The observation is then fit according to the model and parameters in the fitting settings.

Grid Master

Sets up the grid of jobs and prepares config files and directories. Previews observation grid

Grid Settings File

Parameters to vary and how. Directories for saving.

Generates files

Job scripts

Runs

The models are similarly structured individual .py files

Disc Source

Sersic Source

Single Power-Law

Double Power-Law

Truncated Power-Law

Lens Model

Generic class for source models

Source Model

Generic class for source models

Deflection Angle

Surface Brightness

Observation

Constructs the mock observation to be fitted to.

Parameters of mock observation

Initialisation of fit

Observation Settings File

Sets the properties of the observation: Model choice and parameters, SNR, resolution, subsampling etc

Mock Observation

Fitting

Runs MCMC to fit the model specified in the settings to the observation

Fit settings

Fitting Settings File

Settings for the fit: model choice, sampler choice, priors etc

Settings files are YAML files

Mock Observation

Chains, Likelihood

Final Result

Chains, corner plots trace plots, likelihood

Copies of settings files

Directory for each run

Process for an individual job (system)