# skysampler Documentation

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# User Documentation

**skysampler** is a python package which can draw random realizations of survey data, with the special aim of creating random realizations of galaxy clusters and their surrounding galaxies.

The package:

- Handles wide field survey data to learn the joint feature distribution of detections and galaxies

- Draws mock realizations of cluster line-of-sights

- Provides interface for GalSim to render the mock catalogs into full survey-like exposures

Generating mock observations takes place in a data driven way, i.e. clusters are constructed as they are seen in the survey, not according to our theoretical models for them, hence the products are not critically dependent on our physical assumptions, only on survey conditions.

API Reference

## 1.1 Survey Indexing and Target Selection

The two basic objects contain targets, and an interface for the underlying sky survey:

| |
|---|
| skysampler.indexer.TargetData |
| skysampler.indexer.SurveyData |

### 1.1.1 skysampler.indexer.TargetData

### 1.1.2 skysampler.indexer.SurveyData

These can be used to define the indexer object:

| |
|---|
| skysampler.indexer.SurveyIndexer |

### 1.1.3 skysampler.indexer.SurveyIndexer

Which upon completion returns a data container:

| |
|---|
| skysampler.indexer.<br>IndexedDataContainer |

### 1.1.4 skysampler.indexer.IndexedDataContainer

Additional convenience functions:

| |
|---|
| skysampler.indexer.get_theta_edges |
| skysampler.indexer.subsample |
| skysampler.indexer.shuffle |
| skysampler.indexer.get_ndraw |

### 1.1.5 skysampler.indexer.get_theta_edges

### 1.1.6 skysampler.indexer.subsample

### 1.1.7 skysampler.indexer.shuffle

### 1.1.8 skysampler.indexer.get_ndraw

## 1.2 Cluster Emulator

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## Contact

In case of questions or if you would like to use parts of this pipeline in a publication, please contact me at

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