

1-D Spectrum Simulation

Gammapy-0.15

Livetime and Number of Observation

In 1-D spectrum simulation tutorial script there is an option to give Livetime and n_obs, from my what I understand these values represent the as follows:

Livetime : time for which the events were collected or telescope was collecting data.

N_obs / No. of observation : No. of days for which telescope was operating.

Assuming this is true I am keeping the whole observing time to 1000hrs ,i.e; $\text{Livetime} \times \text{n_obs} = 1000\text{hrs}$.

I want to clarify this because I had a second thought that :

Livetime: total observing time

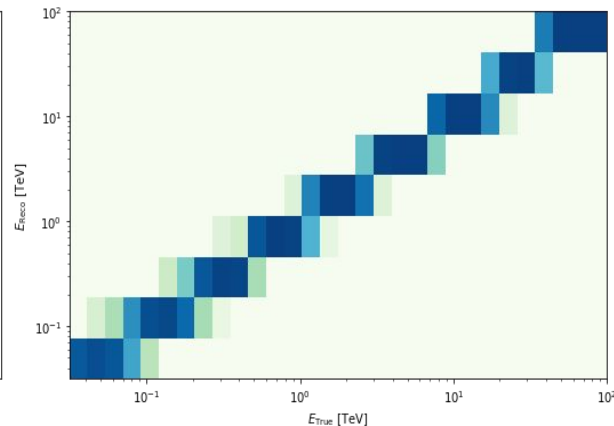
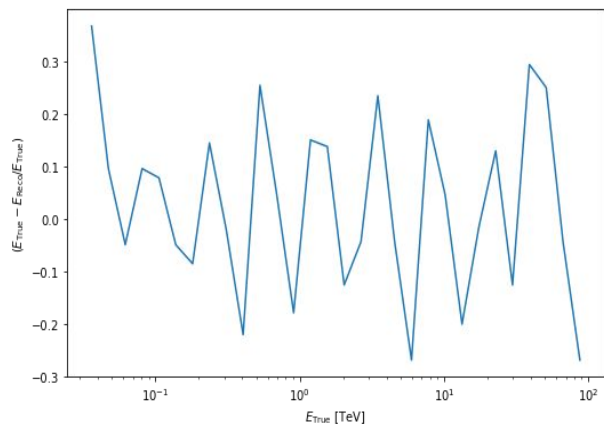
N_obs: no. of times same observation is simulated.

E_true and E_reco (e_reco=energy_axis.edges, e_true=energy_axis_true.edges)

Here I have taken:

```
energy_axis = MapAxis.from_edges( np.logspace(-1.5, 2.0, 10), unit="TeV", name="energy", interp="log")
```

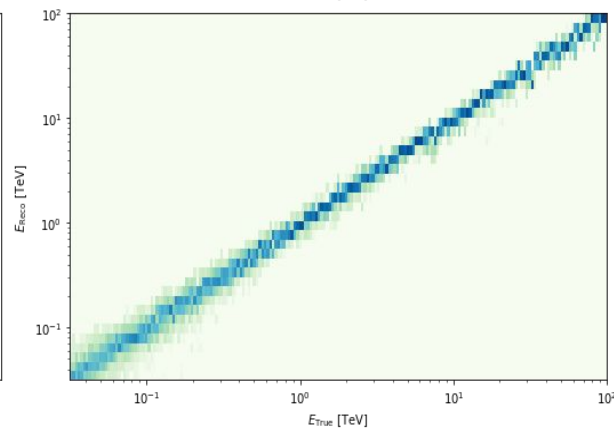
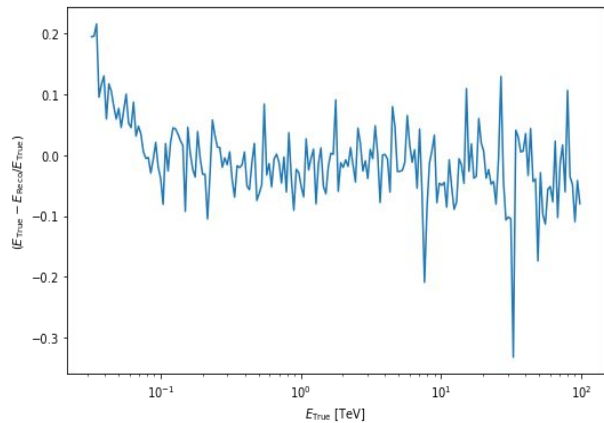
```
energy_axis_true = MapAxis.from_edges( np.logspace(-1.5, 2.0, 10), unit="TeV", name="energy", interp="log")
```



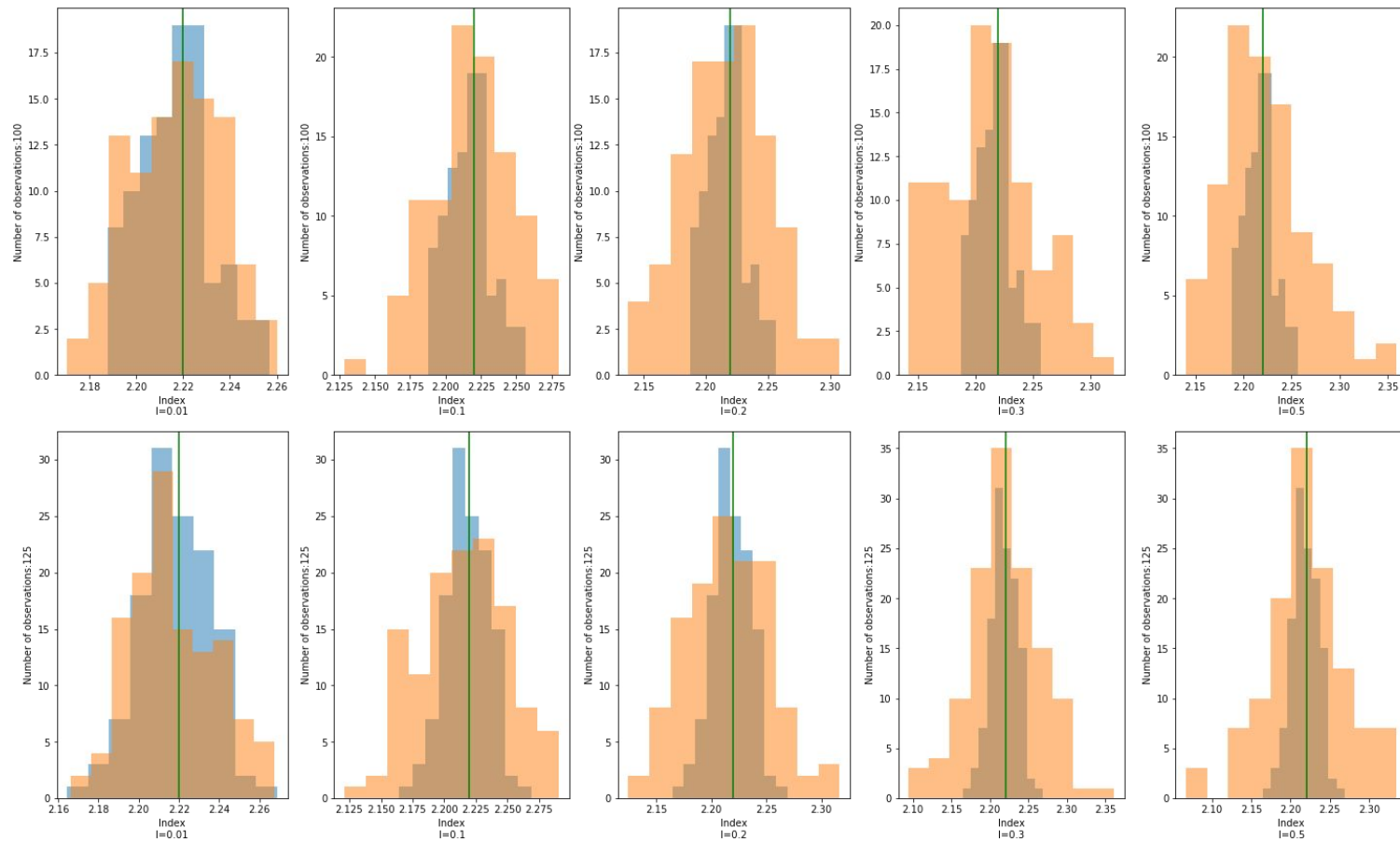
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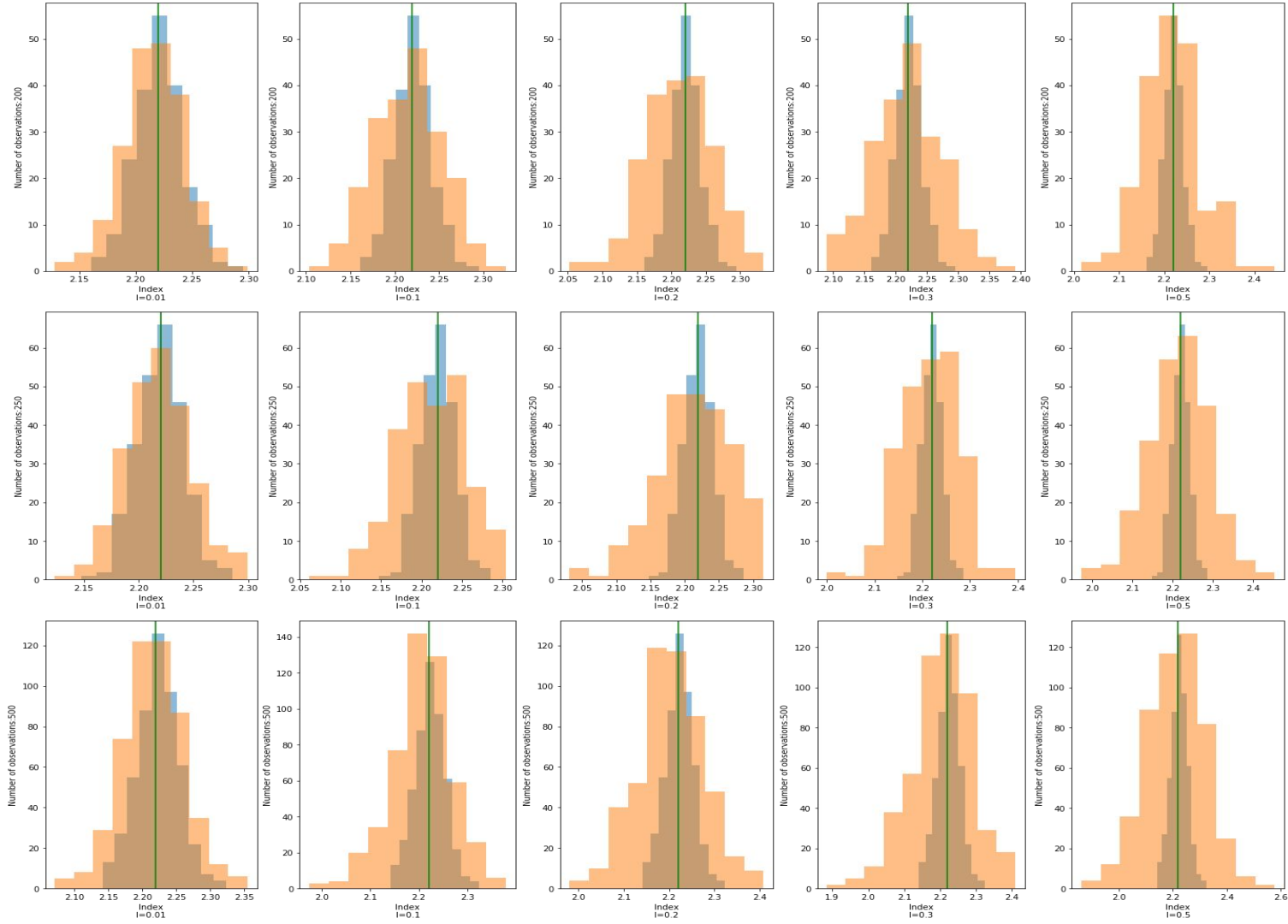
```
energy_axis = MapAxis.from_edges( np.logspace(-1.5, 2.0, 40), unit="TeV", name="energy", interp="log")
```

```
energy_axis_true = MapAxis.from_edges( np.logspace(-1.5, 2.0, 200), unit="TeV", name="energy", interp="log")
```

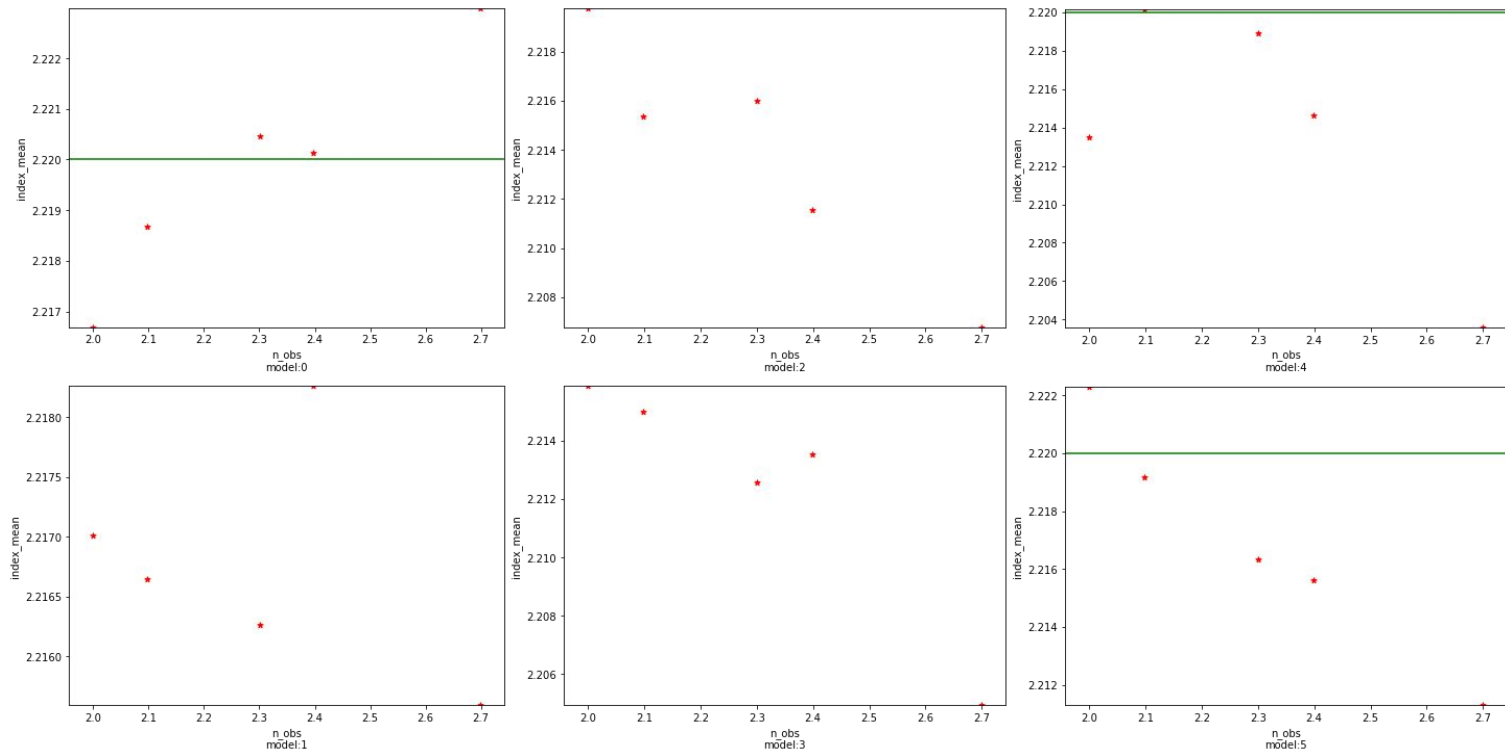


Reconstructed Index

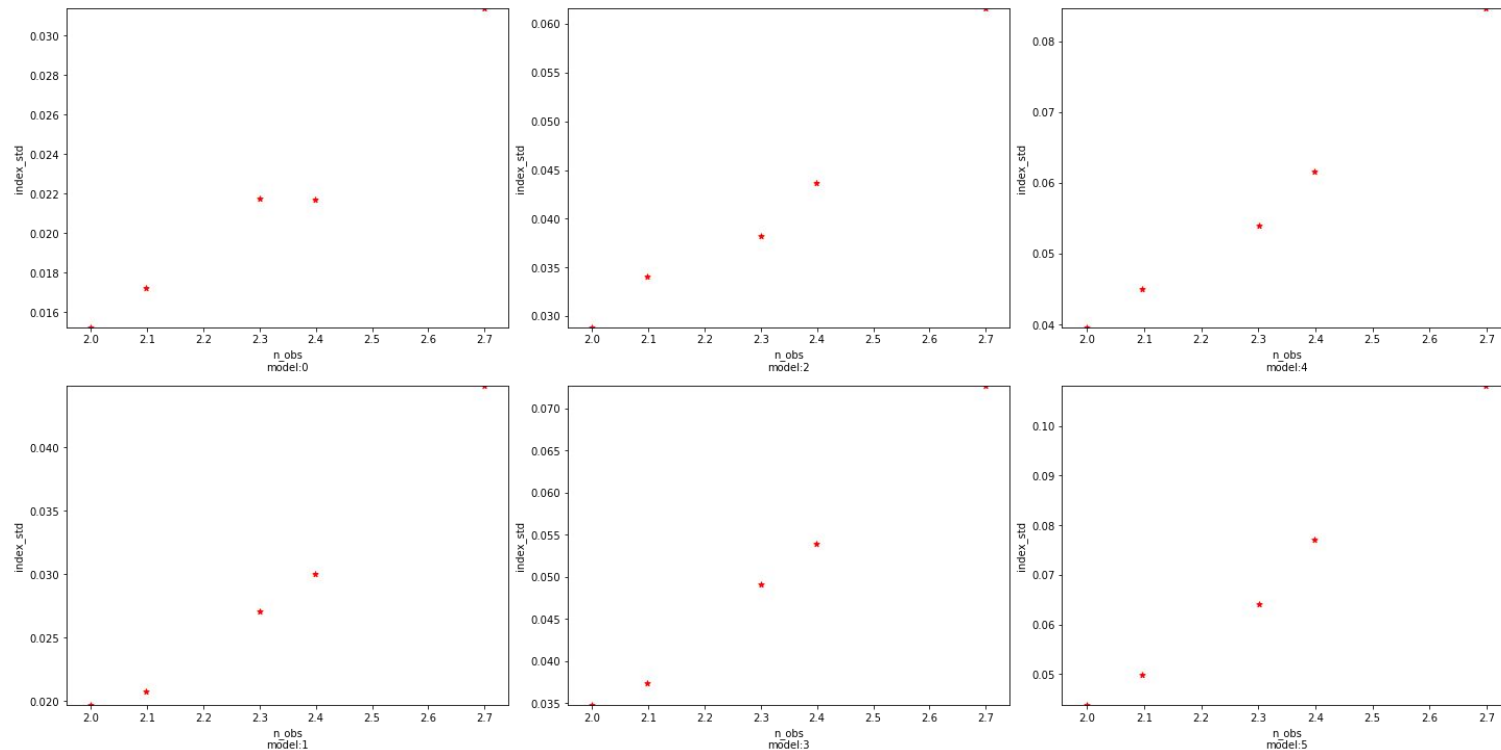




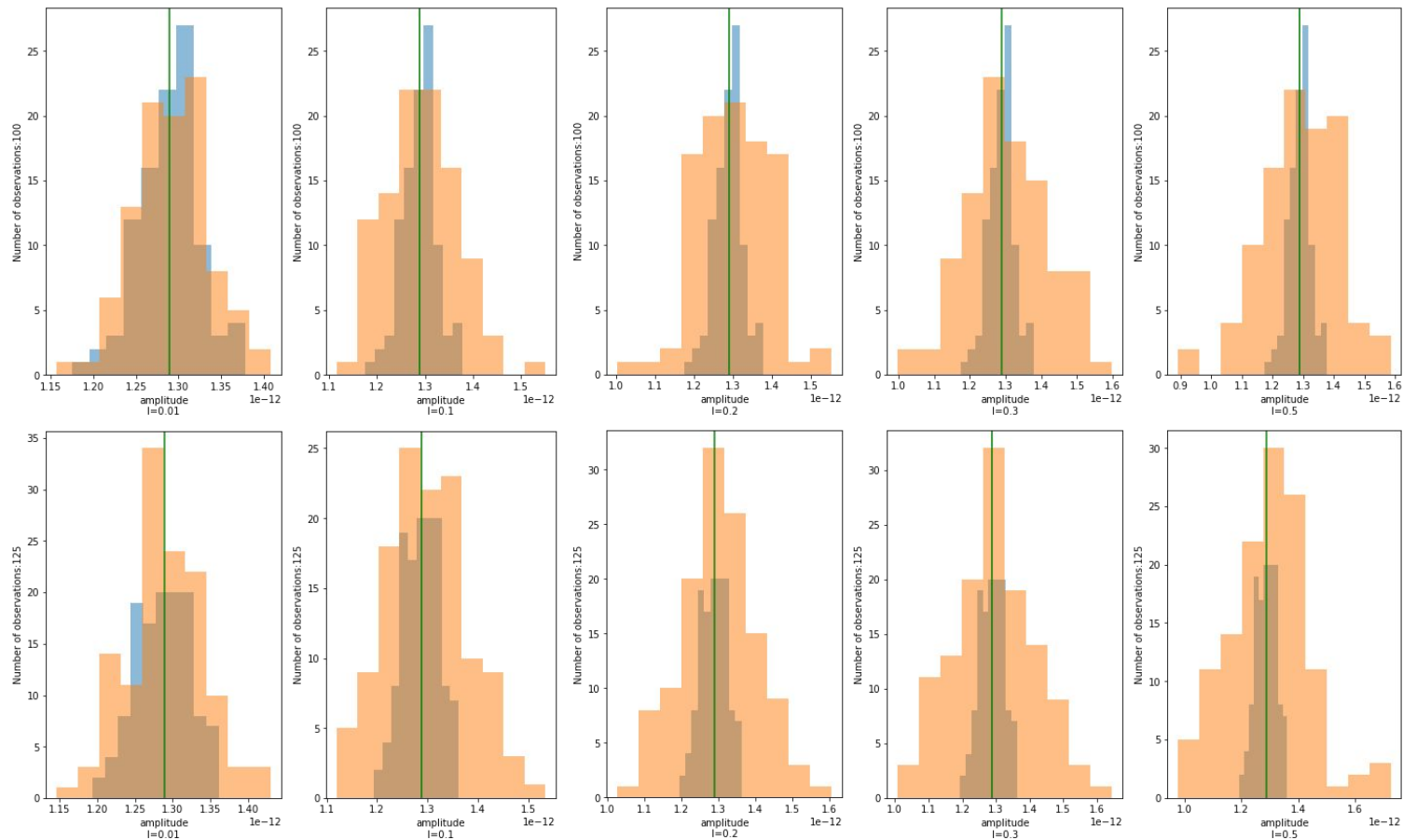
Reconstructed Mean Index Value

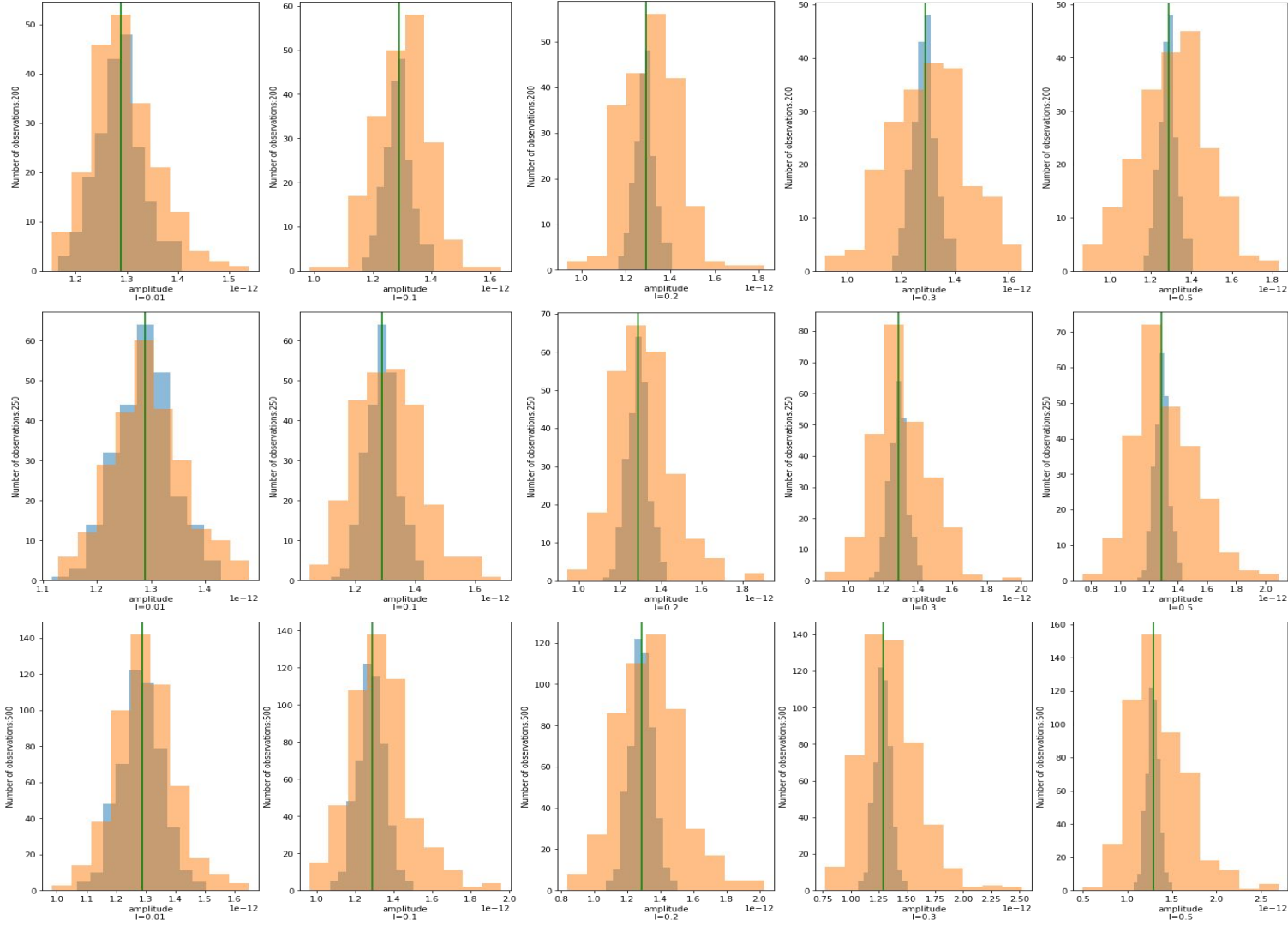


Standard Deviation in Reconstructed Index Value

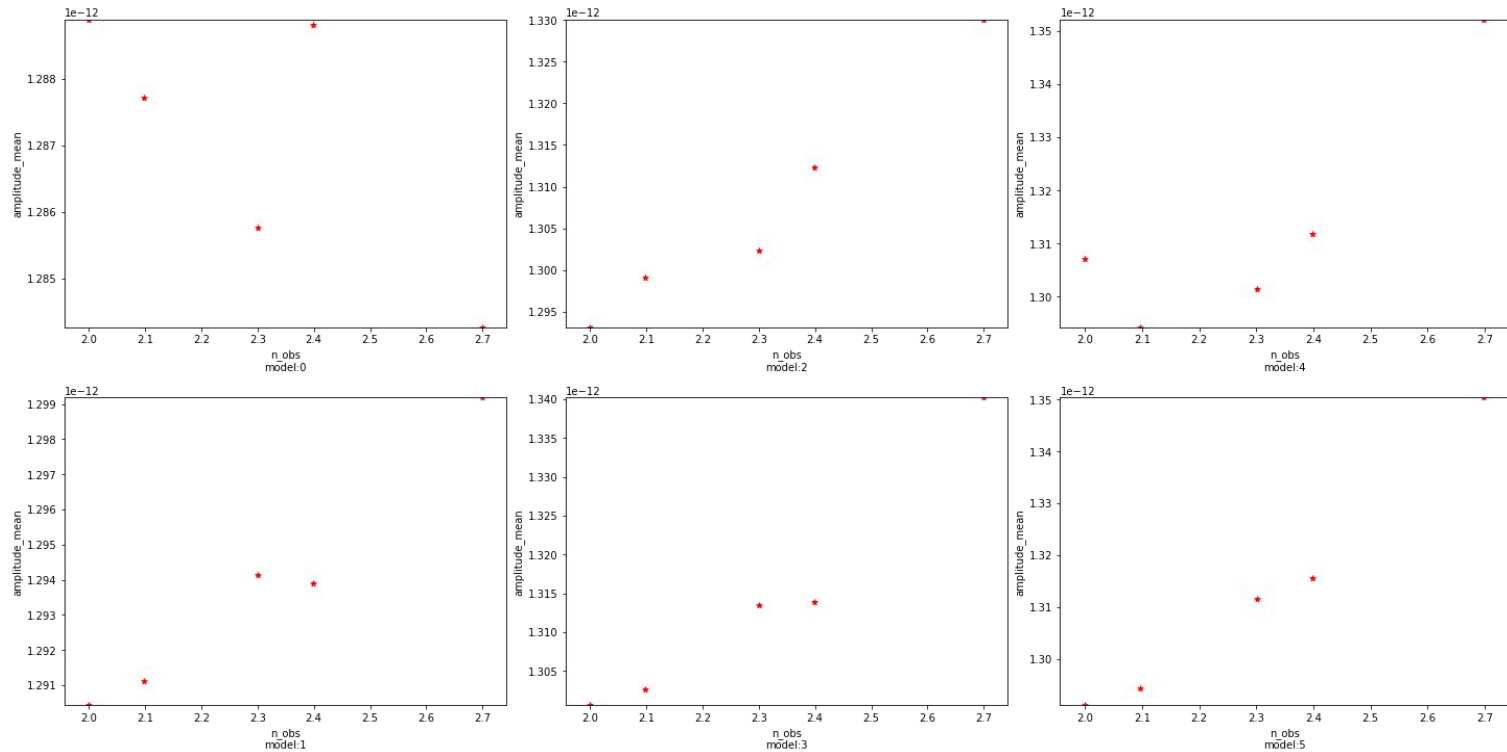


Reconstructed Flux

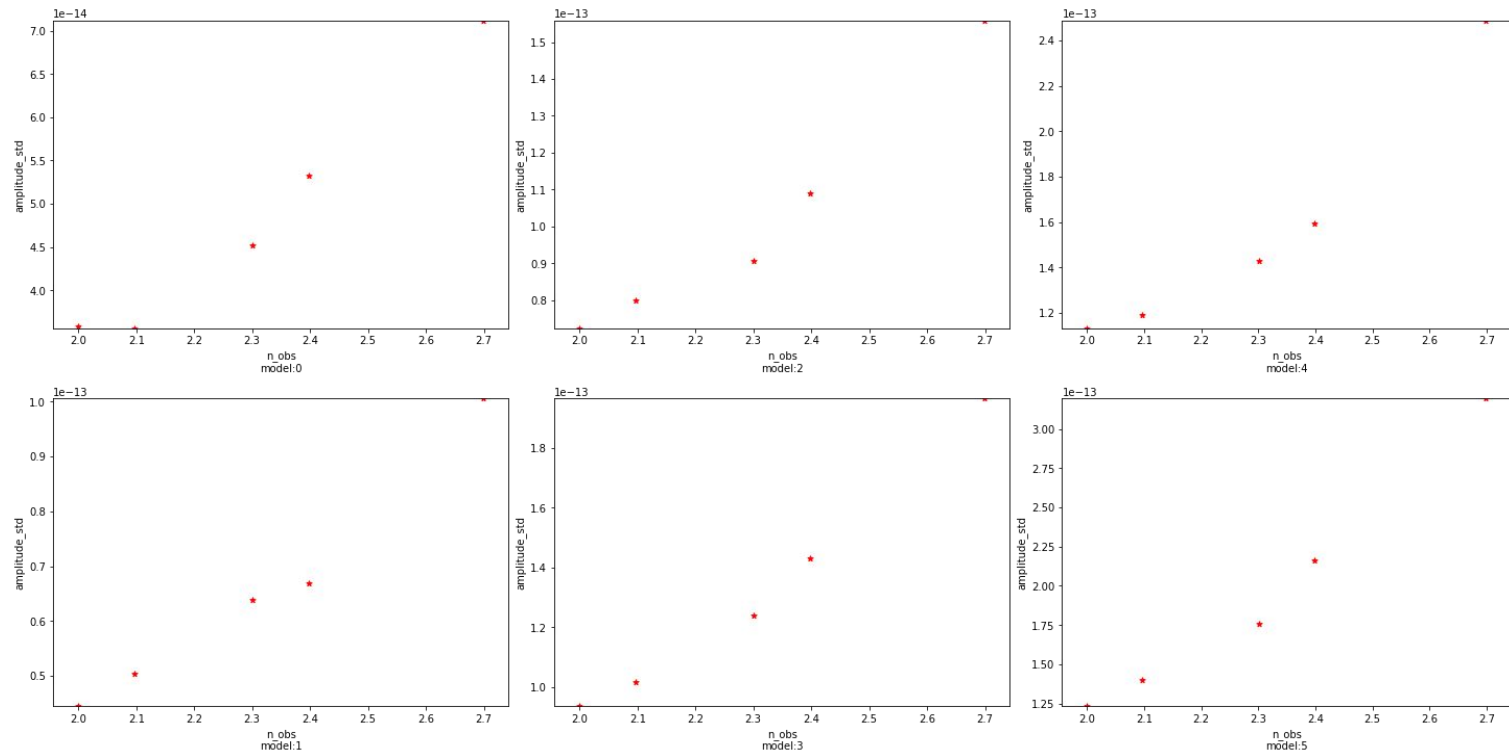




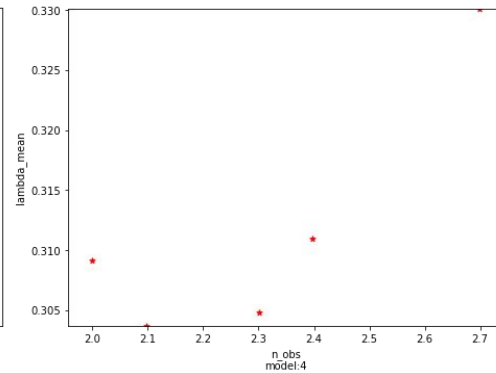
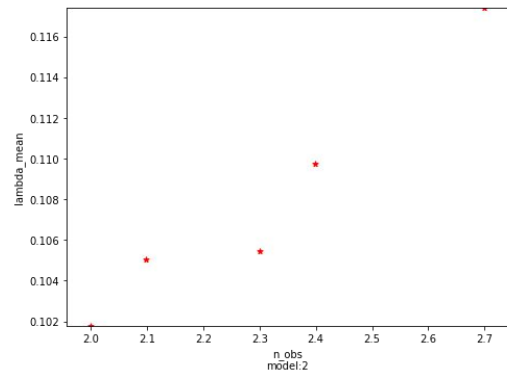
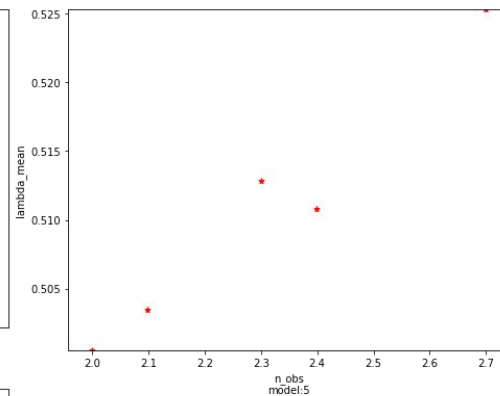
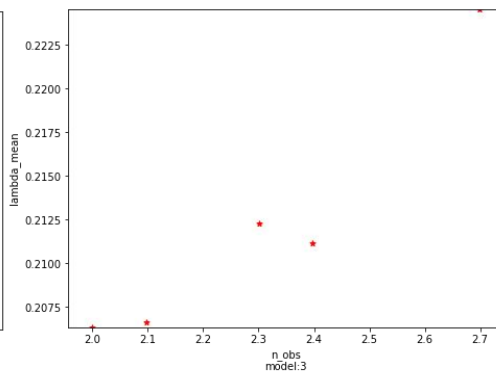
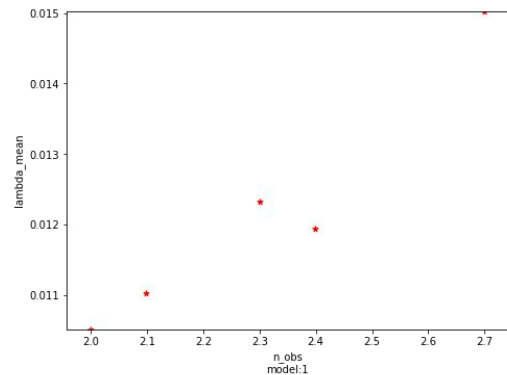
Reconstructed Mean Flux Value



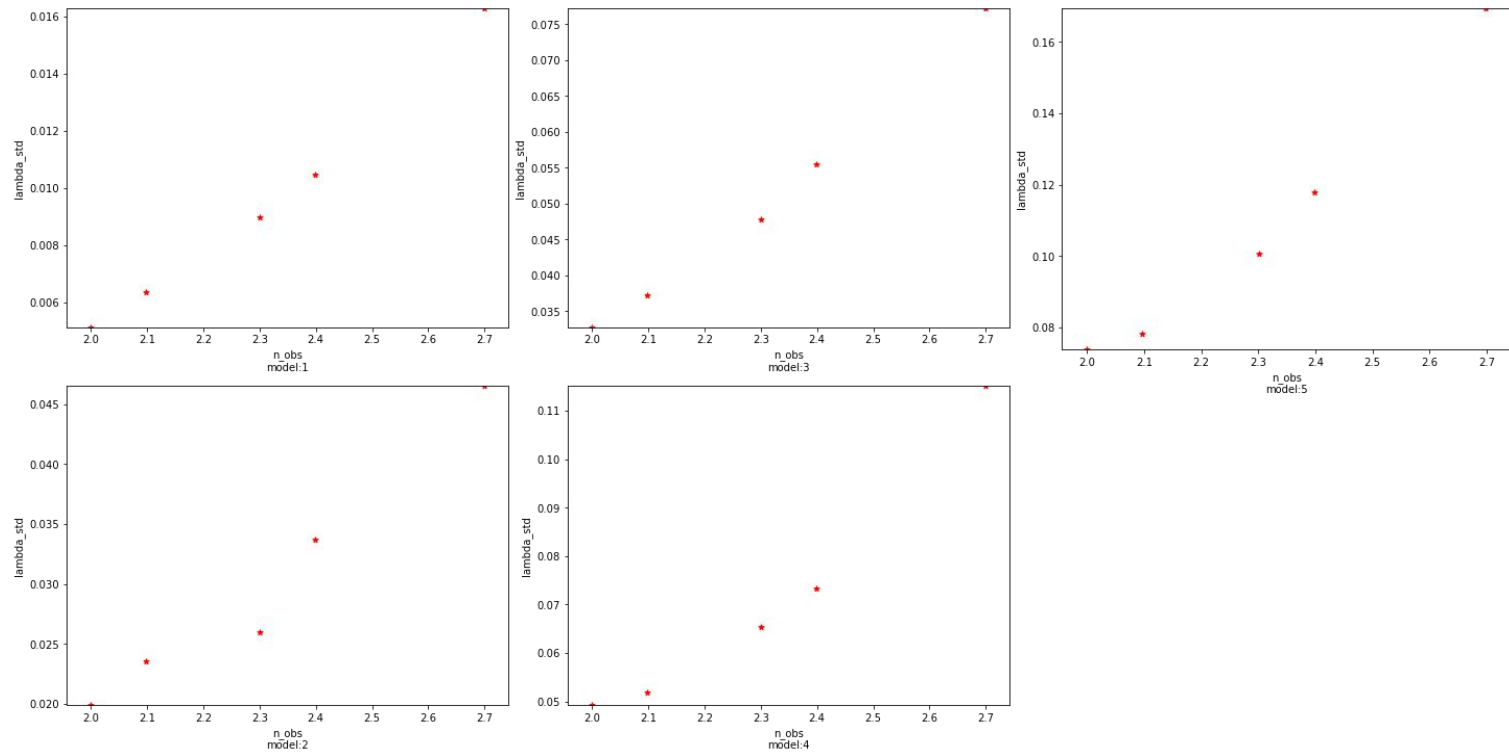
Standard Deviation in Reconstructed Flux Value



Reconstructed Mean Cutoff Value



Standard Deviation in Reconstructed Cutoff Value



Spectrum plots with Error Bar

