

Create grids based on models and plot model grids

Modification History:

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START

1. Overview

Based on the configuration file “[config.yaml](#)”, the program can now create grids from the model in the specified parameter and wavelength ranges. This can efficiently save time and enhance the efficiency.

2. Create Models

`cd /Users/zhang-dirac/Dropbox/Laniakea/Projects/STARFISH_Atmospheric_Models/1.Starfish_Learning/1.Documentation_Learning/eg01_wasp14/actpy36`

`grid.py --create`

FFT grid stretches from 4950.000000000002 to 5250.000000000002

wl_FFT dv is 0.26916832302032306 km/s

Total of 36 files to process.

```
Processing [ 6.00000000e+03  4.00000000e+00 -1.00000000e+00]
Processing [ 6.00000000e+03  4.00000000e+00 -5.00000000e-01]
Processing [ 6.00000000e+03  4.00000000e+00  0.00000000e+00]
Processing [ 6.00000000e+03  4.50000000e+00 -1.00000000e+00]
Processing [ 6.00000000e+03  4.50000000e+00 -5.00000000e-01]
Processing [ 6.00000000e+03  4.50000000e+00  0.00000000e+00]
Processing [ 6.00000000e+03  5.00000000e+00 -1.00000000e+00]
Processing [ 6.00000000e+03  5.00000000e+00 -5.00000000e-01]
Processing [ 6.00000000e+03  5.00000000e+00  0.00000000e+00]
Processing [ 6.10000000e+03  4.00000000e+00 -1.00000000e+00]
Processing [ 6.10000000e+03  4.00000000e+00 -5.00000000e-01]
Processing [ 6.10000000e+03  4.00000000e+00  0.00000000e+00]
Processing [ 6.10000000e+03  4.50000000e+00 -1.00000000e+00]
Processing [ 6.10000000e+03  4.50000000e+00 -5.00000000e-01]
Processing [ 6.10000000e+03  4.50000000e+00  0.00000000e+00]
Processing [ 6.10000000e+03  5.00000000e+00 -1.00000000e+00]
Processing [ 6.10000000e+03  5.00000000e+00 -5.00000000e-01]
Processing [ 6.10000000e+03  5.00000000e+00  0.00000000e+00]
Processing [ 6.20000000e+03  4.00000000e+00 -1.00000000e+00]
Processing [ 6.20000000e+03  4.00000000e+00 -5.00000000e-01]
Processing [ 6.20000000e+03  4.00000000e+00  0.00000000e+00]
Processing [ 6.20000000e+03  4.50000000e+00 -1.00000000e+00]
Processing [ 6.20000000e+03  4.50000000e+00 -5.00000000e-01]
Processing [ 6.20000000e+03  4.50000000e+00  0.00000000e+00]
Processing [ 6.20000000e+03  5.00000000e+00 -1.00000000e+00]
Processing [ 6.20000000e+03  5.00000000e+00 -5.00000000e-01]
Processing [ 6.20000000e+03  5.00000000e+00  0.00000000e+00]
Processing [ 6.30000000e+03  4.00000000e+00 -1.00000000e+00]
Processing [ 6.30000000e+03  4.00000000e+00 -5.00000000e-01]
Processing [ 6.30000000e+03  4.00000000e+00  0.00000000e+00]
Processing [ 6.30000000e+03  4.50000000e+00 -1.00000000e+00]
Processing [ 6.30000000e+03  4.50000000e+00 -5.00000000e-01]
Processing [ 6.30000000e+03  4.50000000e+00  0.00000000e+00]
Processing [ 6.30000000e+03  5.00000000e+00 -1.00000000e+00]
Processing [ 6.30000000e+03  5.00000000e+00 -5.00000000e-01]
Processing [ 6.30000000e+03  5.00000000e+00  0.00000000e+00]
```

The output file is “[libraries/PHOENIX_TRES_wasp14.hdf5](#)”, as specified in the configure file.

3. Plot Models

`grid.py --plot`

All model spectra would be plotted.

This program seems to take a very long time to finish - still waiting... (from 0348PM-Jul09)

4. Funeral

Now the customized model grids are established, then we would obtain the eigenspectra to feed the spectral emulator. See Note: [1. Test Example-WASP14: IV. PCA grid and spectral emulator.](#)