

# CYGNUS (CYprus models for Galaxies and their NUClear Spectra)

## Spheroidal models

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The spheroidal models are described in more detail in Efstathiou et al. (2021). The models form part of the CYGNUS collection of models (<https://arc.euc.ac.cy/cygnus/>).

The spheroidal models are contained in the structure *models*. To restore in Python type for example

```
>>>import numpy as np
>>>spheroidal_structure=np.load('spheroid_models1_z=0.1_met=0.008.npy',allow_pickle=True)
```

The structure has the following active fields:

AGE, TV, TAU, PSI, SPECTRUM

Where

- AGE is the age of the galaxy in yrs
- TV is the optical depth of the spheroidal model
- TAU is the e-folding time of the star formation rate
- PSI controls the intensity of starlight in the galaxy
- SPECTRUM is a structure within the structure that contains the wavelength grid (in microns - note this is different from the AGN torus models grid) and nuSnu of each model.

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## References

Efstathiou, A., et al., 2021, MNRAS, 503, L11.