



# Photometry and the Virtual Observatory.

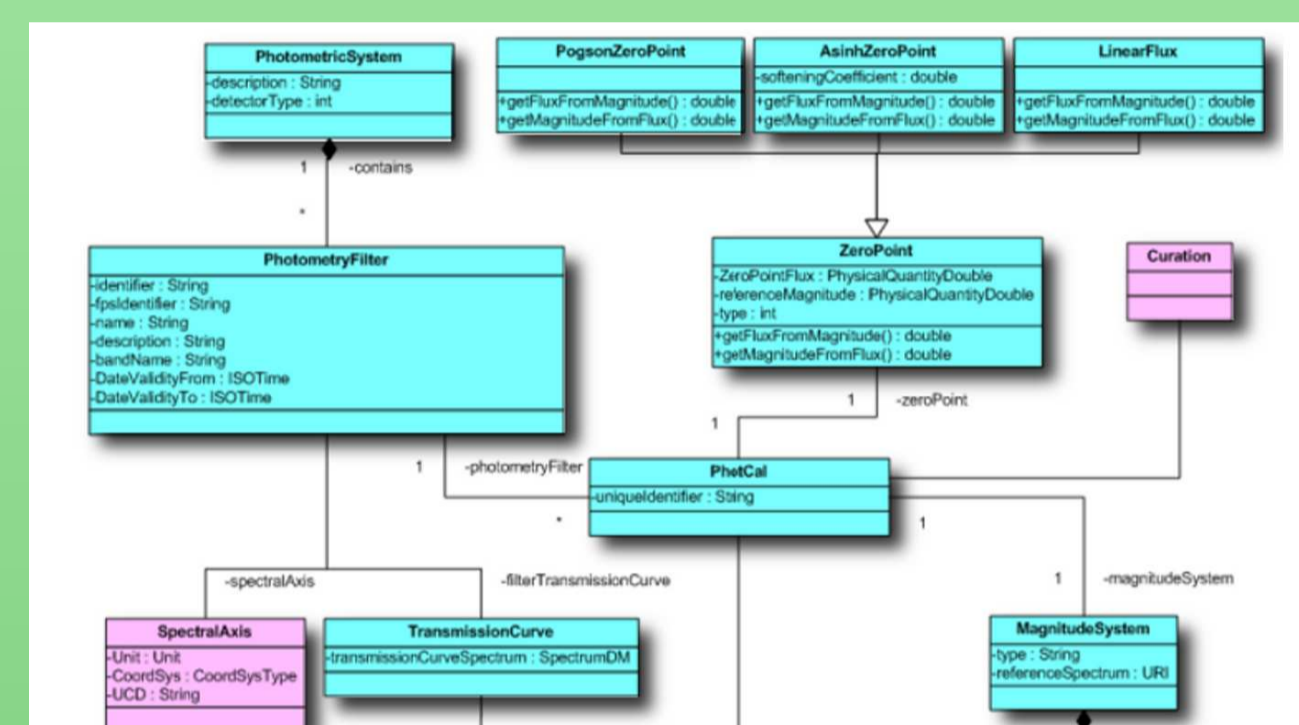
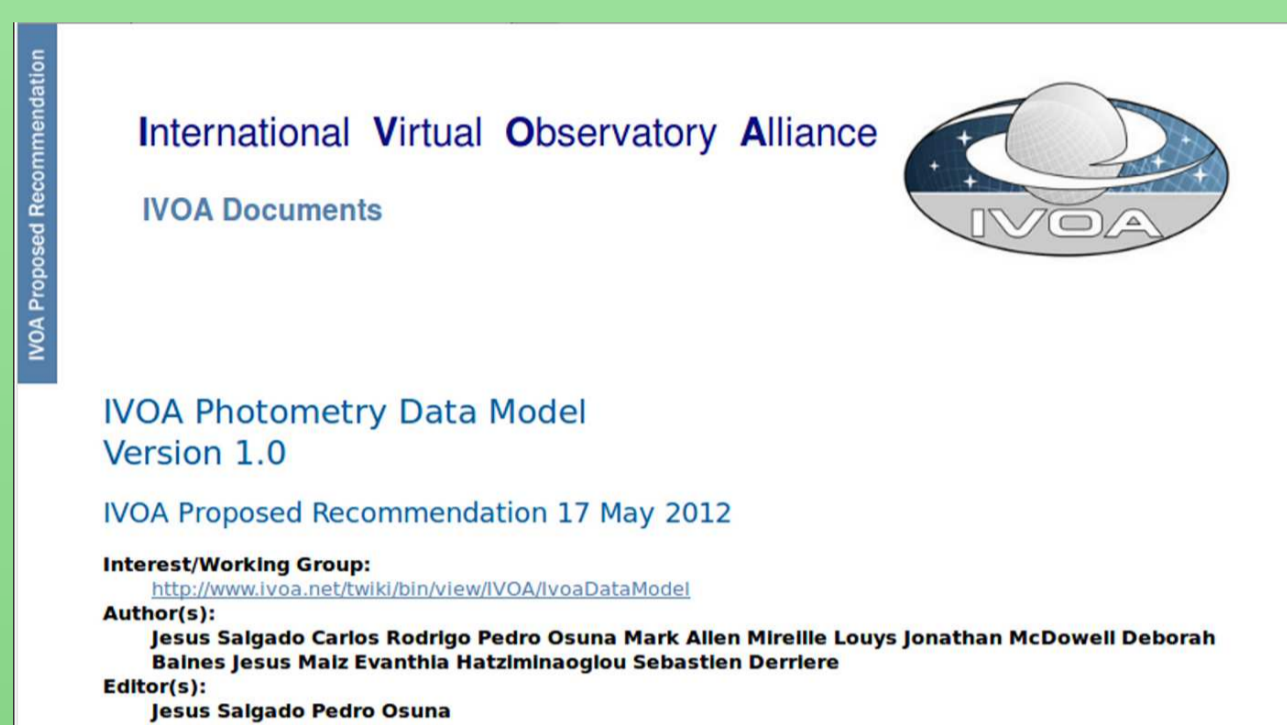
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## Abstract

Building Spectral Energy Distributions combining data from different sources is becoming more important as astronomy takes an increasingly multi-wavelength approach. In order to do this, photometry data must be described in sufficient detail to allow for the conversion to compatible flux density units (including the description of magnitude systems and zero points). Furthermore, comparing observed photometry with the synthetic one for theoretical models allows to infer physical properties from the observed objects. But in order to do that, an even more detailed description of the observed photometric points is needed, including the transmission curves of the filters corresponding to the observed data. In the Virtual Observatory an important effort has been done towards this standardization with the Photometry Data Model. And in the SVO we have developed several services to help in this direction, providing detailed information about filters, synthetic photometry for theoretical models and tools to use all this to analyze observed data and estimate object physical properties.

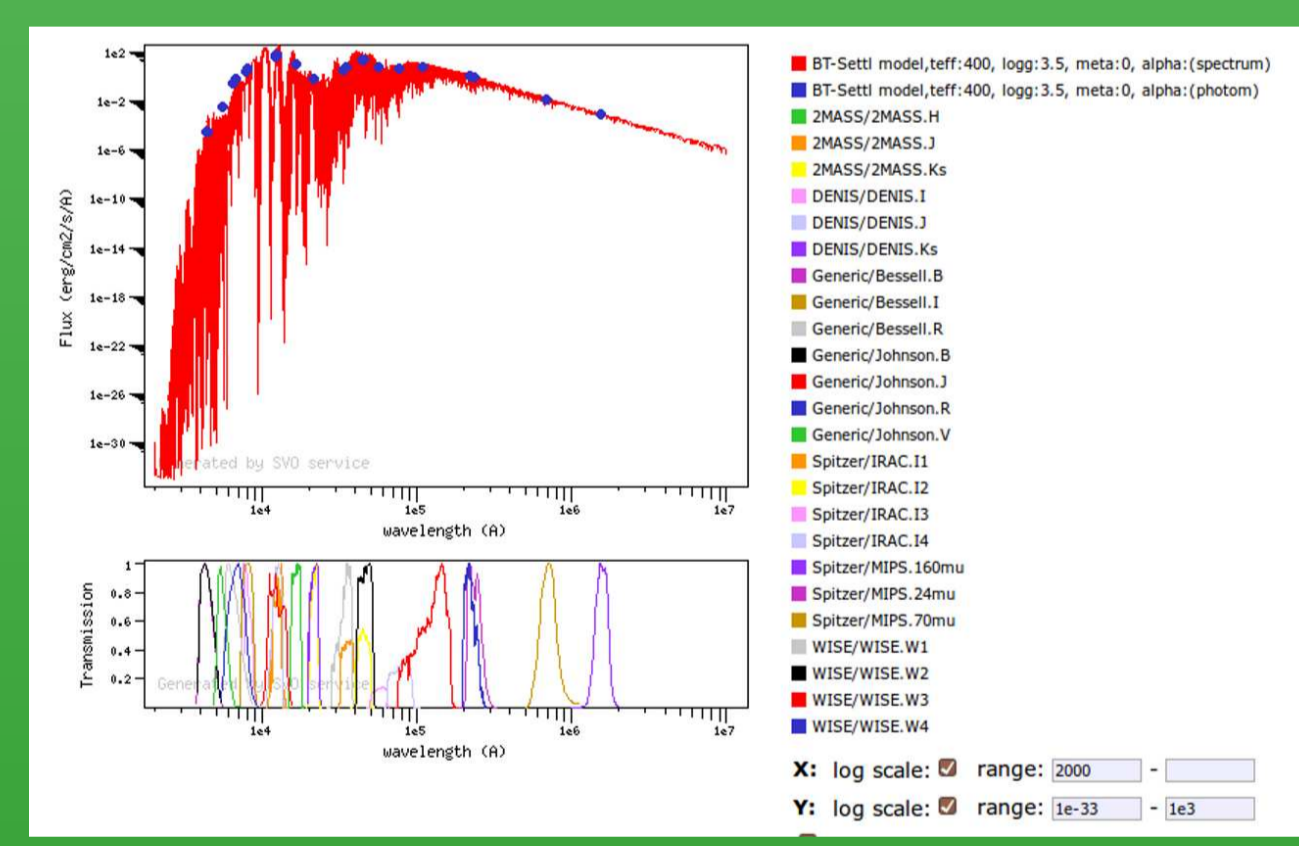
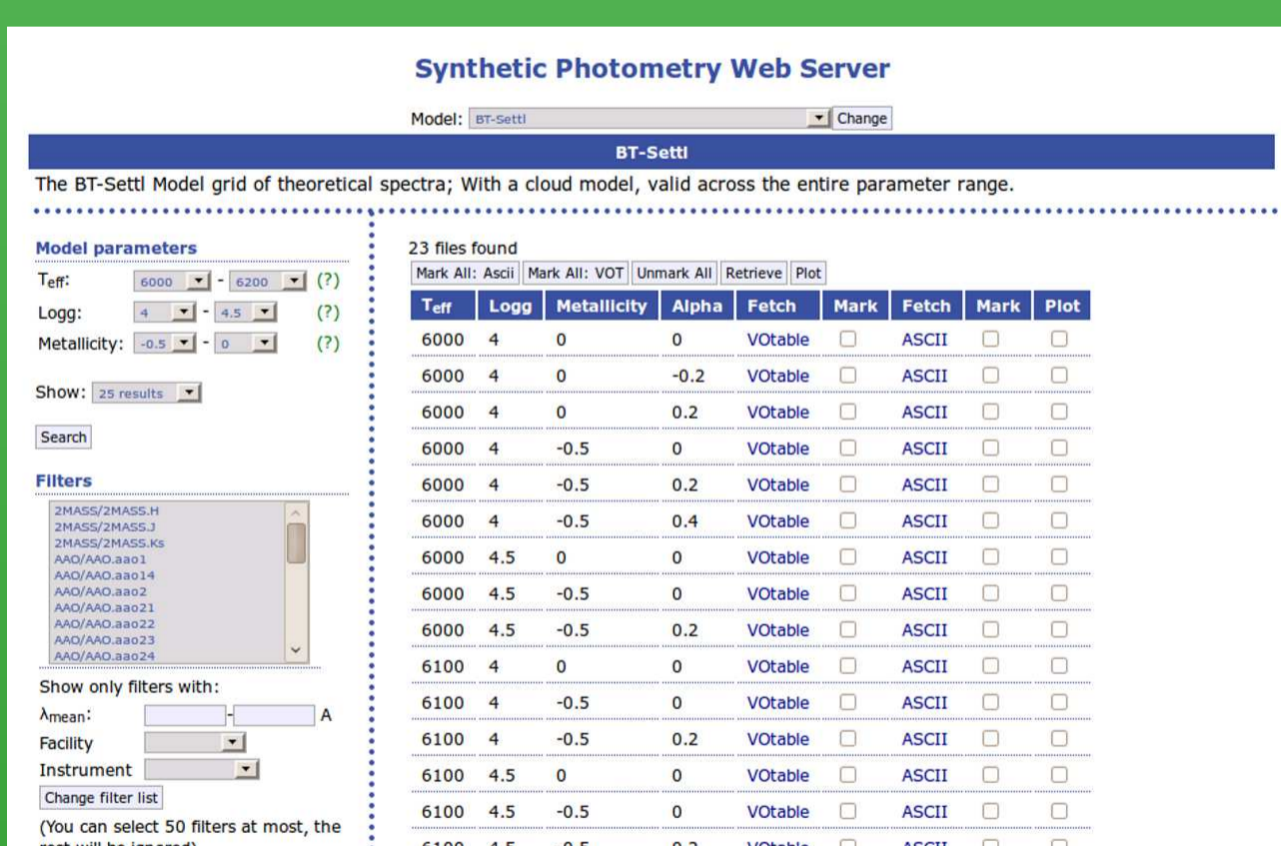
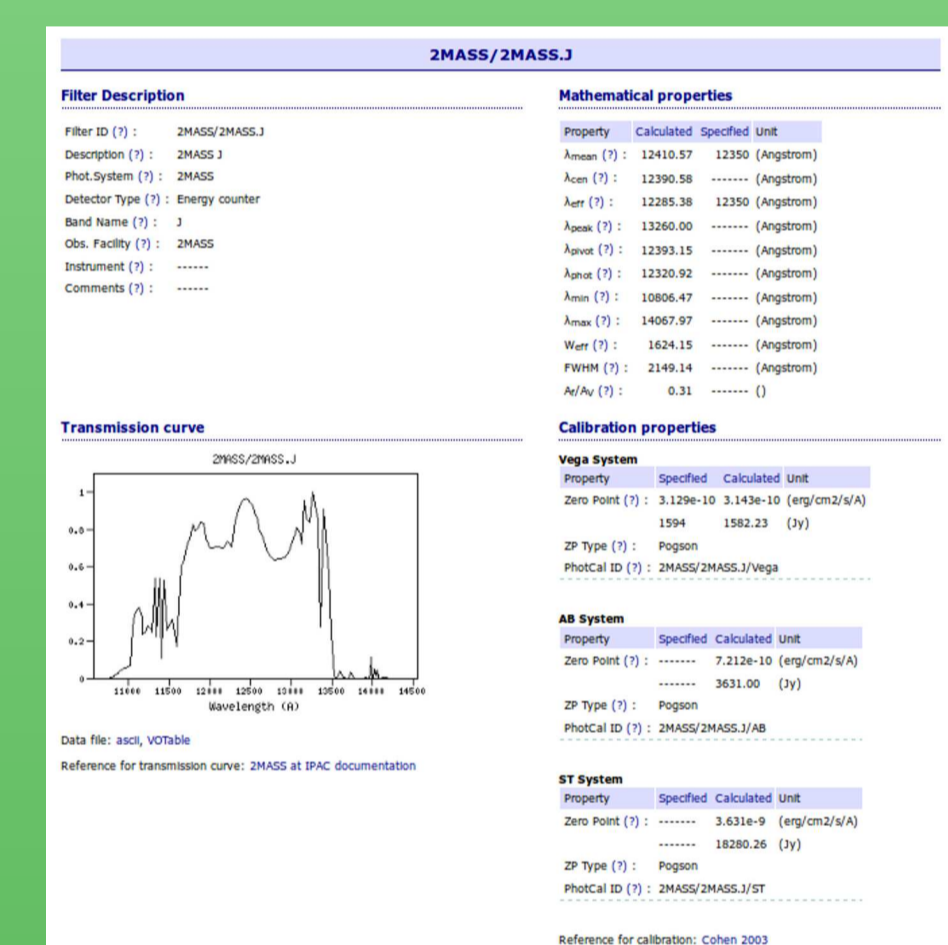
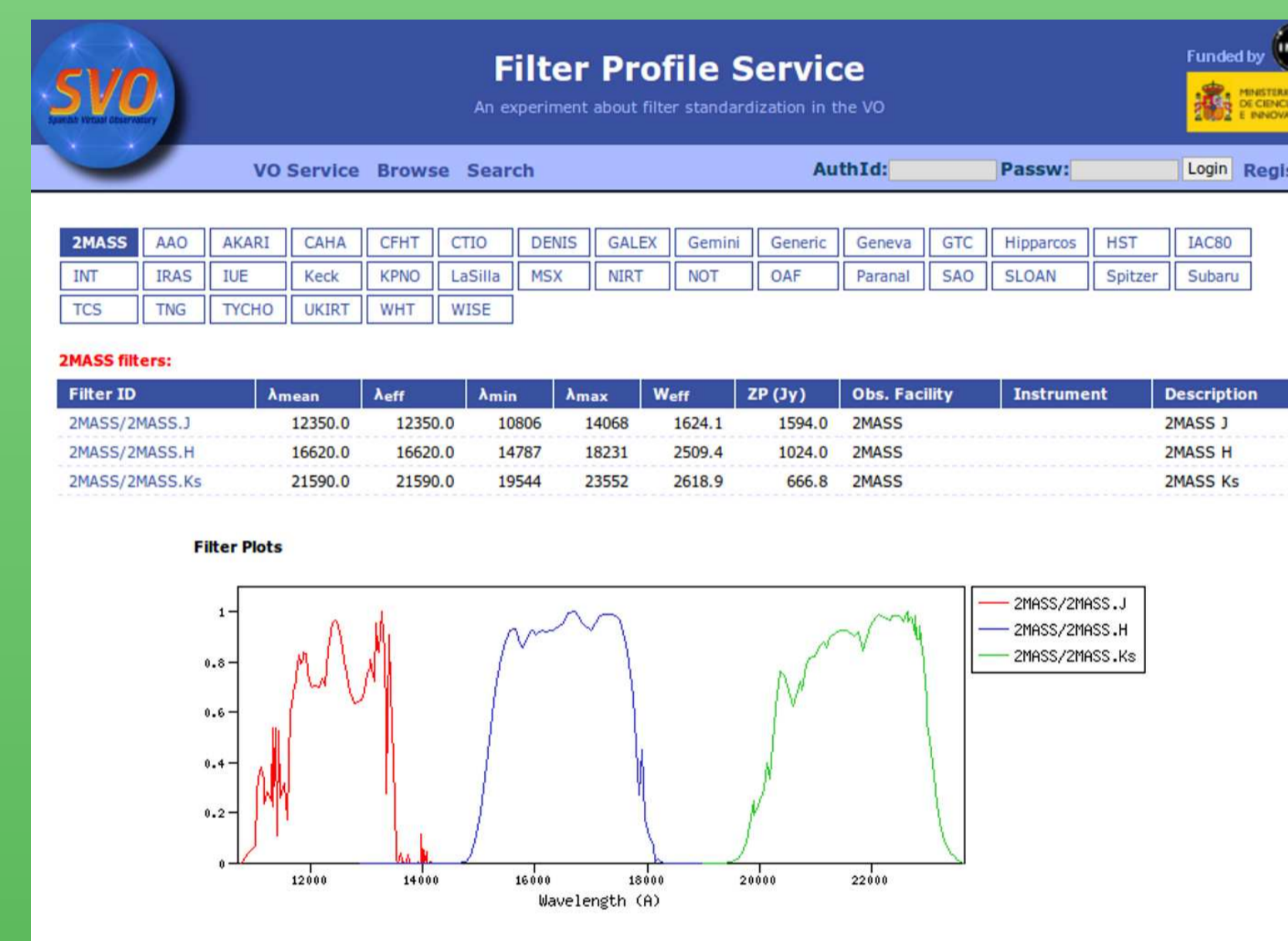


## IVOA Photometry Data Model

- Standardized description of Photometry Filters and Photometric Points (VO catalogs).

## Filter Profile Service

- Properties of nearly 2000 filters.
- Transmission Curve, mathematical properties ( $\lambda_{\text{eff}}$ ,  $W_{\text{eff}}$ , etc), zero points (Vega, AB, asinh).
- Web and VO service, according to VO Photometry data model.
- <http://svo2.cab.inta-csic.es/theory/fps3/>



## Synthetic Photometry Service

- ~ 30 theoretical models + observational templates.
- + FPS filters  $\Rightarrow$  Synthetic photometry
- <http://svo2.cab.inta-csic.es/newov/syph.php>

## VOSA: VO SED Analyzer

- Build well characterized SEDs (User+VO data).
- Analyze them comparing observed and synthetic photometry.
- $\Rightarrow$  Obtain physical properties of real objects.
- <http://svo2.cab.inta-csic.es/theory/vosa/>

