

VOSA 7.0

A VO Spectral Energy Distribution Analyzer

New features

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VOSA (<http://svo2.cab.inta-csic.es/theory/vosa/>) is a public web-tool developed by the Spanish Virtual Observatory (<http://svo.cab.inta-csic.es>) and designed to help users to (1) build Spectral Energy Distributions (SEDs), combining private photometric measurements with data available in VO services, (2) obtain relevant properties of these objects (distance, extinction, etc) from VO catalogues, (3) analyze them comparing observed photometry with synthetic photometry from different collections of theoretical models or observational templates, using different techniques (chi-square fit, Bayesian analysis) to estimate physical parameters of the observed objects (temperature, mass, luminosity, etc), and use these results to (4) estimate masses and ages using collections of isochrones and evolutionary tracks from the VO. The results can be downloaded in different formats or sent to other VO tools using SAMP.

VOSA is in operation since 2008 (Bayo et al, 2008, A&A 492,277B), with more than 2400 active users (~8 million objects analysed), and ~200 refereed papers published making use of this tool.

We describe here the most relevant features in VOSA 7.0, whose release is expected in the coming weeks.

VOSA, VO SED analyzer

A web tool.

- <http://svo2.cab.inta-csic.es/theory/vosa/>

Designed to:

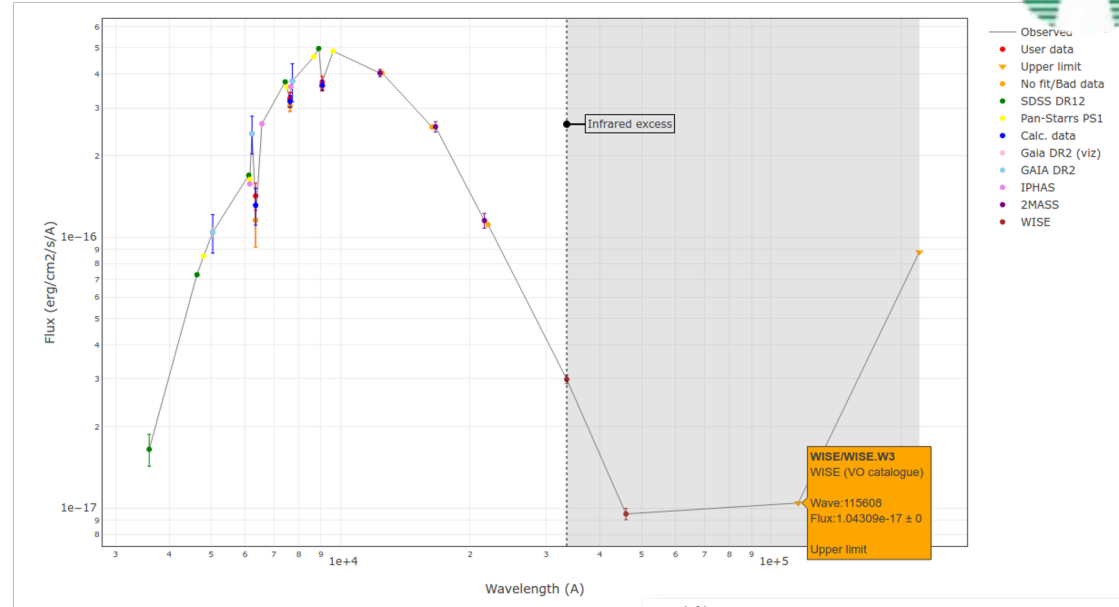
- Build, edit and visualize objects SEDs (User+VO data),
- Analyze them comparing observed and synthetic photometry,
- Estimate physical properties of analyzed objects,
- Work with many objects at the same time (~10000).
- Submit asynchronous, parallel jobs.

In operation since 2008 (Bayo et al, 2008, A&A 492,277B)

- More than 2400 users and more than 8 million objects analyzed.
- At least 200 refereed papers published using VOSA.

1. Build object SEDs.

- User photometry tables + VO catalogues.
More than 40 well characterized VO photometry catalogues.
- Search for objects properties in VO services (coordinates, distance, extinction)
- Automatic detection of infrared excess.
- SED visualization and edit.

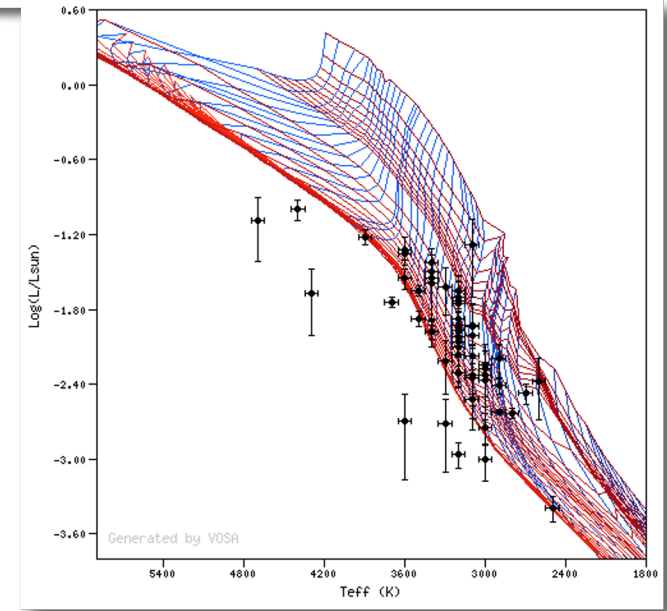
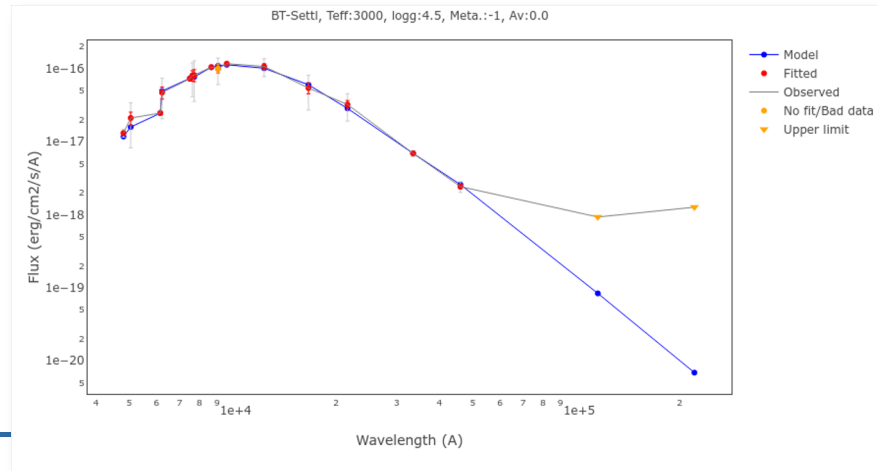


2. Analyze object SEDs.

- Chi-square model/template fit, Bayes analysis, HR diagram.
- Extinction as a fit parameter.
- Using VO services: more than 40 collections of theoretical models, observational templates, isochrones, evolutionary tracks.
- Estimate physical parameters: Teff, logg, metallicity, age, mass, etc.

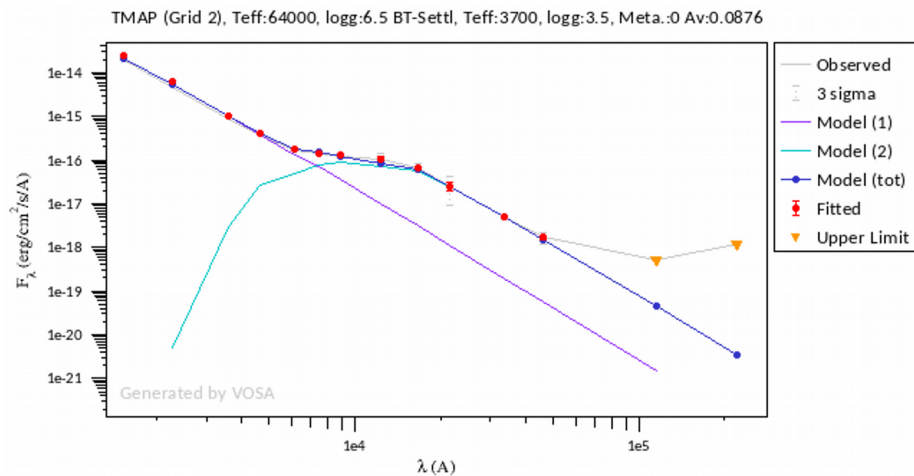
3. Save results.

- VOTable, ASCII, png, eps...
- Send to other VO apps: SAMP



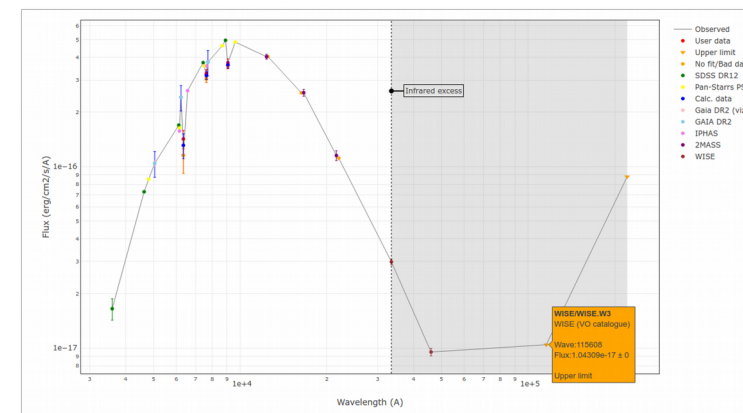
New features in version 7.

Binary object model fit.



More flexibility in HR diagram analysis.

Interactive plots.



Include synthetic photometry from user spectra (with SpecPhot).

Fit model	Isochrones/Tracks	Teff range
BT-Settl	Use: BT-Settl (as default)	(800 - 1700 K)
	Use: <input type="text" value="ATMO2020, (CEQ)"/>	for: <input type="text" value="800"/> - <input type="text" value="1000"/> K
	Use: <input type="text" value="BHAC15"/>	for: <input type="text" value="1200"/> - <input type="text" value="1500"/> K +
Kurucz ODFNEW /NOVER	Use: Sless (as default)	(3500 - 3500 K)
	Use: <input type="text" value="PARSEC 1.2"/>	for: <input type="text" value="3500"/> - <input type="text" value="3500"/> K
	Use: <input type="text" value="---"/>	for: <input type="text"/> - <input type="text"/> K +

Filter	λ	Flux
GALEXGALEX_FUV	1542.26	2.81144e-12
HSTACS_SBC_F122M	1407.82	3.154059e-12
HSTACS_SBC_F125LP	1506.92	3.035193e-12
HSTACS_SBC_F15LP	1507.44	3.038443e-12
HSTACS_SBC_F150L	1508.82	3.029775e-12
HSTACS_SBC_F151L	1513.81	2.988005e-12
HSTWFPCC2_F157W	1540.41	2.846595e-12
HSTACS_SBC_F140LP	1548.05	2.802055e-12
HSTACS_SBC_F155LP	1618.04	2.522056e-12
HSTWFPCC2_F170W	1707.35	2.297881e-12
HSTACS_SBC_F165LP	1760.45	2.148411e-12
HSTWFPCC2_F185W	1913.17	1.791045e-12
HSTWFPCC2_F19W	2132.01	1.385206e-12
HSTWFC3_UVIS2_F218W	2212.42	1.309187e-12
HSTWFC3_UVIS1_F218W	2215.66	1.303832e-12
HSTACS_IRC_F228W	2244.54	1.288141e-12
HSTWFC3_UVIS2_F223N	2326.70	1.177187e-12
HSTWFC3_UVIS1_F223N	2328.77	1.17720e-12
HSTWFC3_UVIS2_F225W	2345.96	1.171086e-12
HSTWFC3_UVIS1_F225W	2359.57	1.158828e-12

New features in version 7.

- New VO catalogs:
 - Galex GR6/7; Galex GR5/MIS
 - CMC15
 - JPLUS- DR1
 - SDSS DR12
 - PanStarrs DR2
- New theoretical models:
 - TMAP (Grid2, Grid 3)
 - Koester DA /Koester DB/DC
 - ATMO 2020 CEQ, NEQ Strong, NEQ weak
- New isochrones/evolutionary tracks:
 - ATMO 2020
 - SPOTS
 - PISA
 - Geneva
 - ...
- Other improvements:
 - Better excess management
 - Plots improvement
 - Small bugs solved
 - ...