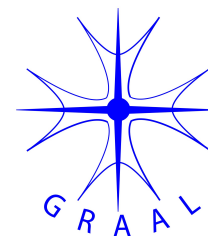


Base de données POLLUX

M. Belmas, A. Lèbre A. Palacios : **gestion, conception, mise en oeuvre**

M. Gebran, E. Josselin, F. Martins, B. Plez : **production de données**



Base de données de spectres stellaires théoriques

Ouverte au public en janvier 2008 avec accès via interface web

<http://pollux.graal.univ-montp2.fr>

Propose :

des spectres synthétiques à très haute résolution
des distributions spectrales d'énergie

Domaine de longueur d'onde : 300 nm à 1200 nm pour les SSHR

Domaine plus étendu pour les SEDs.

Les données :

Données pour les types spectraux O à M à métallicité solaire avec :

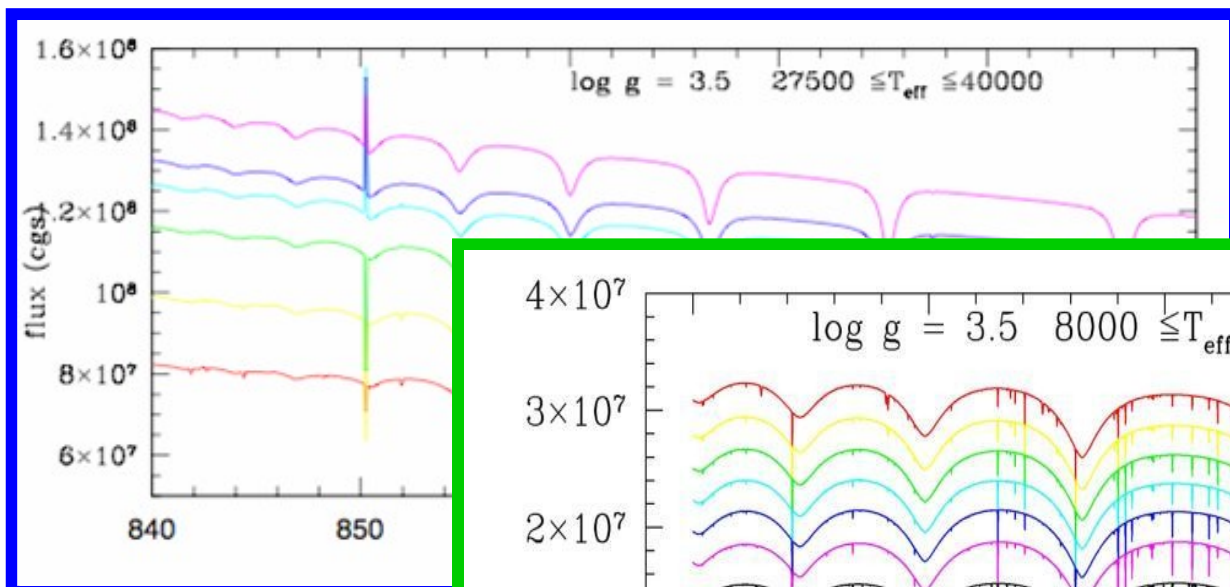
- les meilleurs modèles d'atmosphère sur le marché (CMFGEN, ATLAS and MARCS)
- des codes de synthèse spectrale performants (CMF_FLUX, SYNSPEC and TURBOSPECTRUM)
- des listes de raies atomiques et moléculaires dédiées.

Spectres synthétiques Haute Résolution

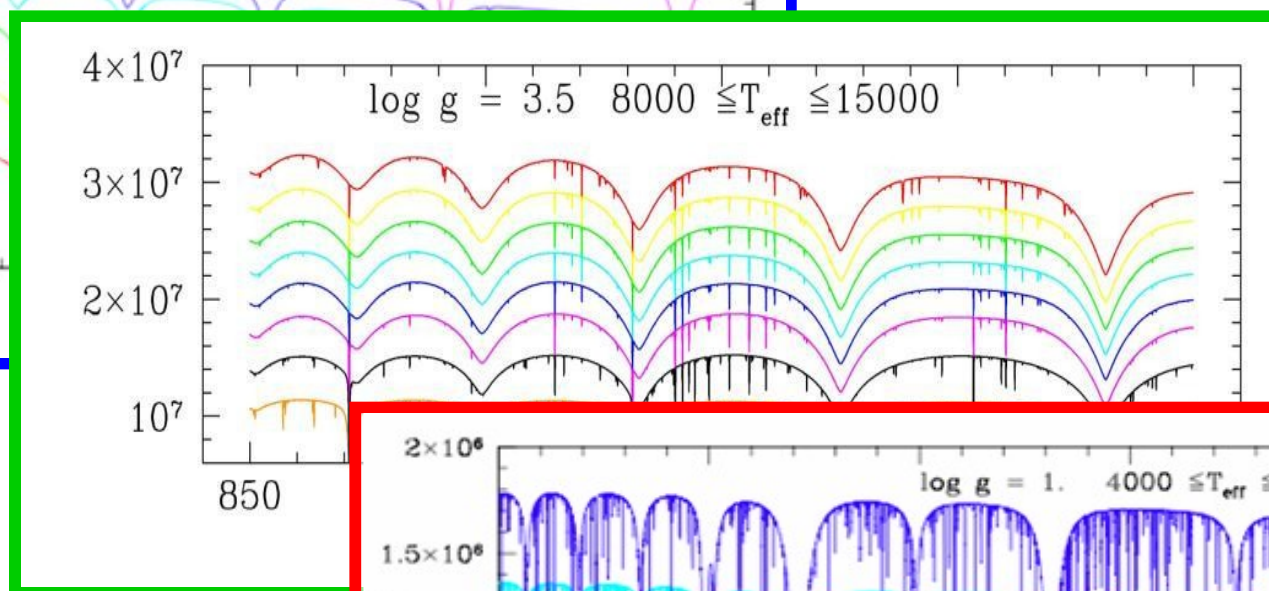
- calculés entre 300 nm et 1200 nm avec une résolution $R = 150000$
- normalisés au continu ou en flux absolu
- couverture du CMD en T_{eff} , $\log g$, Fe/H

Exemples de spectres dans le domaine du RVS Gaia

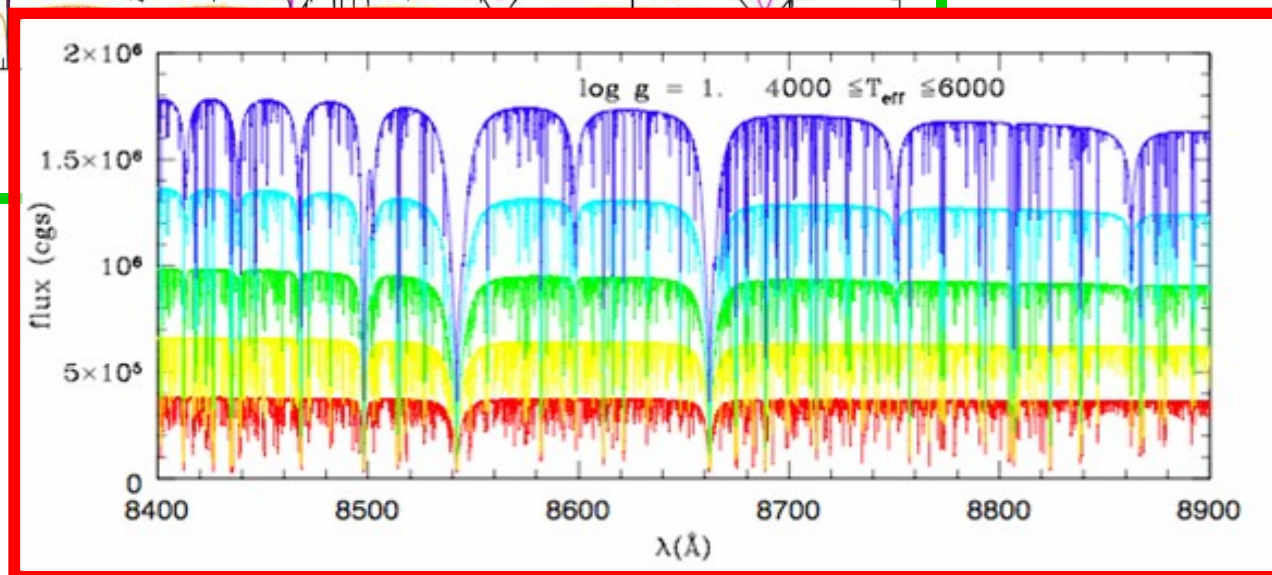
CMFGEN



ATLAS



MARCS





database

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NAVIGATION

- Home
- Access to the Pollux Database
- User's Guide
- Links
- Site Graal
- News
- Google
- POLLUX TEAM
- Documents
- The POLLUX Database of Stellar Spectra

The POLLUX Database of Stellar Spectra

Welcome to the POLLUX Website !

POLLUX is a stellar spectra database proposing access to theoretical data. High resolution synthetic spectra and spectral energy distributions have been computed using the best available models of atmosphere (CMFGEN, ATLAS and MARCS), performant spectral synthesis codes (CMF_FLUX,SYNSPEC and TURBOSPECTRUM) and atomic linelists from VALD database and specific molecular linelists for cool stars. Spectral types from O to M are represented for a large set of parameters : Teff, log g, [Fe/H], specific abundances .

- [Access to the Pollux Database](#)
- [User's Guide](#)



NEWS

The POLLUX Database of Stellar Spectra
2007-03-15

[More news...](#)



Groupe de Recherche en Astronomie et Astrophysique du Languedoc

Calculated Spectra Search

Synthetic Spectra Request Form

Choix de la donnée

Choix du modèle
d'atmosphère

Choix du type de modèle

Data search

Type of data: SSHR & SED

Issued from Model Atmosphere: MARCS & CMFGEN & ATLAS

Type of Model Atmosphere: parallel & spherical

Spectrum Parameters (at least one mandatory)

	lowest	low/equal	high	highest
effective temperature (K)	4000	<input type="text"/>	<input type="text"/>	48530
gravity log10 (cgs)	0.000	<input type="text"/>	<input type="text"/>	5.000
mass (solar mass)	14.260	<input type="text"/>	<input type="text"/>	82.500
luminosity (log10 of solar luminosity)	4.250	<input type="text"/>	<input type="text"/>	6.100
microturbulent velocity (km/s)	1.000	<input type="text"/>	<input type="text"/>	5.000
metallicity ([Fe/H])	0.000	<input type="text"/>	<input type="text"/>	0.000

Liste des paramètres
interrogeables par requête

Specific Abundances (optional)

	lowest	low/equal	high	highest
alpha elements [alpha/Fe]	0.000	<input type="text"/>	<input type="text"/>	0.000
Carbon [C/Fe]	0.000	<input type="text"/>	<input type="text"/>	0.500
Oxygen [O/Fe]	0.000	<input type="text"/>	<input type="text"/>	0.000
Nitrogen [N/Fe]	0.000	<input type="text"/>	<input type="text"/>	0.000
r process elements [r elements/Fe]	0.000	<input type="text"/>	<input type="text"/>	0.000
s process elements [s elements/Fe]	0.000	<input type="text"/>	<input type="text"/>	0.000

Cart Status

No spectra to be downloaded

[Remove all items from Cart](#)

Logout to delete all opened files on a session data





















































































Retour de requête

Results of Research

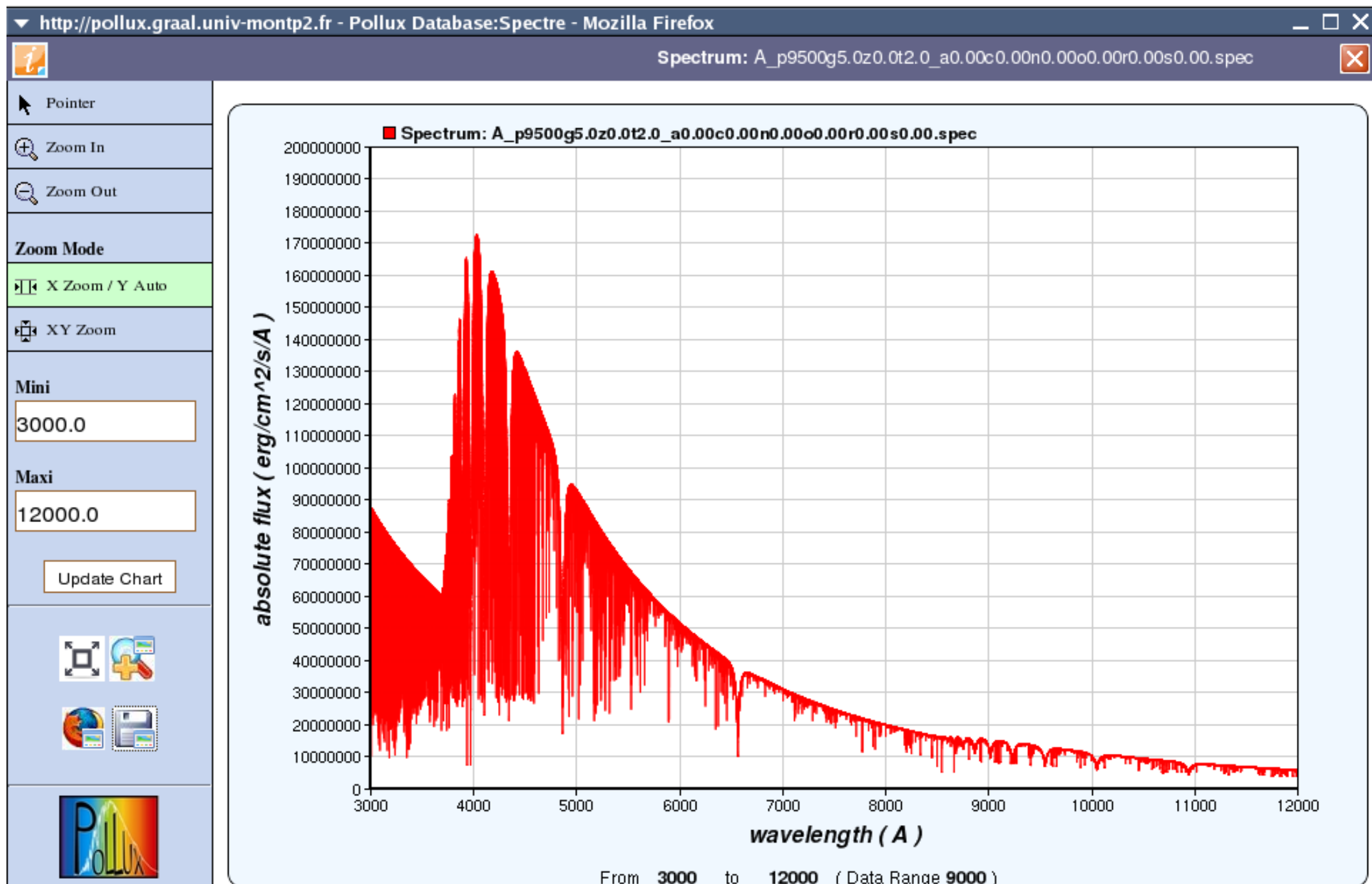

refine search
new search
Page 1/3






Display Data	Data Type	Model	type	Teff	logg	[M / M _⊙]	log[L / L _⊙]	microturbulent velocity	[Fe / H]	[α / Fe]	[C / Fe]	[O / Fe]	[N / Fe]	[r / Fe]	[s / Fe]		
  	spec	ATLAS12	p	9500	5.0			2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
  	spec	ATLAS12	p	9500	4.5			2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
  	spec	ATLAS12	p	9500	4.0			2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
  	spec	ATLAS12	p	9500	3.5			2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
  	spec	ATLAS12	p	9000	5.0			2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
  	spec	ATLAS12	p	9000	4.5			2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
  	spec	ATLAS12	p	9000	4.0			2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
  	spec	ATLAS12	p	9000	3.5			2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
  	spec	ATLAS12	p	8500	5.0			2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
  	spec	ATLAS12	p	8500	4.5			2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
  	spec	ATLAS12	p	8500	4.0			2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
  	spec	ATLAS12	p	8500	3.5			2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
  	spec	ATLAS12	p	8000	5.0			2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
  	spec	ATLAS12	p	8000	4.5			2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
  	spec	ATLAS12	p	8000	4.0			2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
  	spec	ATLAS12	p	8000	3.5			2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
  	spec	ATLAS12	p	7500	5.0			2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
  	spec	ATLAS12	p	7500	4.5			2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
  	spec	ATLAS12	p	7500	4.0			2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
  	spec	ATLAS12	p	7500	3.5			2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
  	spec	ATLAS12	p	7000	5.0			2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
  	spec	ATLAS12	p	7000	4.5			2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
  	spec	ATLAS12	p	7000	4.0			2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
  	spec	ATLAS12	p	7000	3.5			2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
  	spec	ATLAS12	p	15000	5.0			2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		

Fenêtre graphique avec spectre en flux absolu - Fonctionnalités graphiques diverses



Fenêtre graphique avec spectre en flux normalisé - Fonctionnalités graphiques diverses

http://pollux.graal.univ-montp2.fr - Pollux Database: Spectre - Mozilla Firefox

Spectrum: A_p9500g5.0z0.0t2.0_a0.00c0.00n0.00o0.00r0.00s0.00.spec

Pointer

Zoom In

Zoom Out

Zoom Mode

X Zoom / Y Auto

XY Zoom

Mini

3000.0

Maxi

12000.0

Update Chart

flux relative to continuum

wavelength (Å)

From 3000 to 12000 (Data Range 9000)

Done



Spectrum: A_p9500g5.0z0.0t2.0_a0.00c0.00n0.00o0.00r0.00s0.00.spec

```

code1           = ATLAS12           code for atmosphere model
version1        = 2005              version of code for model atmosphere
type           = p                 type of model atmosphere (Spherical/Parallel)
filename        = 9500g5.0z0.0a0.0C0.0.mod model atmosphere filename
author_mod      = Gebran            model atmosphere creator name

Teff           = 9500              effective temperature (K) - model atmosphere data
logg           = 5.0               log10(gravity) (cgs) - model atmosphere data
mass           = irrelevant         mass (solar mass) - model atmosphere data
lum            = irrelevant         luminosity (solar luminosity) - model atmosphere data
turbvel        = 2.00             microturbulent velocity (km/s) - model atmosphere data

conv_alpha     = 0.0               convection parameter (conva) - model atmosphere data
conv_ny        = irrelevant         convection parameter (convny) - model atmosphere data
conv_y         = irrelevant         convection parameter (convy) - model atmosphere data
conv_beta      = irrelevant         convection parameter (convb) - model atmosphere data
macroturbvel   = 0.0               macroturbulence parameter (mt) - model atmosphere data
macrobeta      = 0.0               macroturbulence parameter (mb) - model atmosphere data

Mdot           = irrelevant         log10(mass loss) (solar mass/year) - model atmosphere data
Vinfy          = irrelevant         terminal velocity (km/s) - model atmosphere data
beta           = irrelevant         velocity law parameter - model atmosphere data
finfty         = irrelevant         1st clumping law parameter - model atmosphere data
vcl            = irrelevant         2nd clumping law parameter (km/s) - model atmosphere data

metallic_mod   = 0.000             metallicity ([Fe/H])
alpha_mod      = 0.000             [alpha/Fe]
r_process_mod  = 0.000             [r elements/Fe]
s_process_mod  = 0.000             [s elements/Fe]

Abu_01         = 12.000            abundance
Abu_02         = 10.930            abundance
Abu_03         = 1.100             abundance
Abu_04         = 1.400             abundance
Abu_05         = 2.690             abundance
Abu_06         = 8.520             abundance
Abu_07         = 7.920             abundance
Abu_08         = 8.830             abundance
Abu_09         = 4.500             abundance
Abu_10         = 8.080             abundance
Abu_11         = 6.330             abundance
Abu_12         = 7.580             abundance
Abu_13         = 6.470             abundance
Abu_14         = 7.550             abundance
Abu_15         = 5.450             abundance
Abu_16         = 7.330             abundance
Abu_17         = 5.500             abundance
Abu_18         = 6.400             abundance
Abu_19         = 5.120             abundance
Abu_20         = 6.360             abundance
Abu_21         = 3.170             abundance
Abu_22         = 5.020             abundance
Abu_23         = 4.000             abundance
Abu_24         = 5.670             abundance
Abu_25         = 5.390             abundance
Abu_26         = 7.500             abundance
Abu_27         = 4.920             abundance
Abu_28         = 6.250             abundance
Abu_29         = 4.210             abundance
Abu_30         = 4.600             abundance
Abu_31         = 3.130             abundance
Abu_32         = 3.630             abundance
Abu_33         = 2.370             abundance
Abu_34         = 3.350             abundance
Abu_35         = 2.630             abundance
Abu_36         = 3.230             abundance
Abu_37         = 2.400             abundance
Abu_38         = 2.930             abundance
Abu_39         = 2.220             abundance
Abu_40         = 2.610             abundance
Abu_41         = 1.400             abundance
Abu_42         = 1.960             abundance

```

Fichier header
décrivant les données

 search

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Cart Status - DOWNLOAD SPECTRA

Panier

Download spectra

up to 2 file(s) to be downloaded go back to form

<input checked="" type="checkbox"/>	File Name	Type of data	File Size
<input checked="" type="checkbox"/>	A_p9500g4.5z0.0t2.0_a0.00c0.00n0.00o0.00r0.00s0.00.spec	High Resolution Synthetic Spectrum	1883 Ko
<input checked="" type="checkbox"/>	A_p9500g5.0z0.0t2.0_a0.00c0.00n0.00o0.00r0.00s0.00.spec	High Resolution Synthetic Spectrum	1925 Ko

File Type

VOTable FITS Flat table

Format

zip tar

Total size of the archive **3808** Ko

This request will erase your selection

download



Groupe de Recherche en Astronomie et Astrophysique du Languedoc

Évolution de POLLUX

Passage au FITS

étape faite mais pas encore en ligne
construction de fits par interrogation du logiciel VO TOPCAT

Le header (ascii) est inscrit dans la partie « image » du fits

Enregistrement dans le VO

à faire

Addition et complétion des données (grilles plus fines, autres métallicités)

à publier

VOTable intégrée dans la partie « image » du fits telle que générée par TOPCAT

C_s27500g3.25z0.0t5.0_a0.00c0.00n0.00o0.00_Mdot-6.50vinfty1850beta0.8finfty1vc10.sed.FITS

```
1 SIMPLE = ..... T / Standard FITS format ..... BITPIX = ..... 8 / Character data ..... NAXIS1 = ..... 1 / Text string ..... NAXIS2 = ..... 17495 / Number of characters ..... VOTMETA = ..... T / Table metadata in VOTable format ..... EXTEND = ..... T / There are standard extensions ..... COMMENT The data in this primary HDU consists of bytes which ..... COMMENT comprise a VOTABLE document. .... COMMENT The VOTable describes the metadata of the table contained ..... COMMENT in the following BINTABLE extension. .... COMMENT The BINTABLE extension can be used on its own as a perfectly ..... COMMENT good table, but the information from this HDU may provide some ..... COMMENT useful additional metadata. .... END
2 <?xml version='1.0' encoding='UTF-8'?>
3 <VOTABLE version='1.1'>
4 <!--
5 | VOTable written by uk.ac.starlink.votable.FitsPlusTableWriter
6 | Describes BINTABLE extension in following HDU
7 |-->
8 <RESOURCE>
9 <PARAM arraysiz="*" datatype="char" name="header_name_SED" value="C_s27500g3.25z0.0t5.0_a0.00c0.00n0.00o0.00_Mdot-6.50vinfty1850beta0.8finfty1vc10.sed.txt"/>
10 <PARAM arraysiz="*" datatype="char" name="short_name_SED" value="C_s27500g3.25z0.0t5.0_a0.00c0.00n0.00o0.00_Mdot-6.50vinfty1850beta0.8finfty1vc10.sed"/>
11 <PARAM arraysiz="*" datatype="char" name="Key_SED" value="C_s27500g3.25z0.0t5.0_a0.00c0.00n0.00o0.00_Mdot-6.50vinfty1850beta0.8finfty1.0vc10.0.sed"/>
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13 <DESCRIPTION>code for model atmosphere</DESCRIPTION>
14 </PARAM>
15 <PARAM datatype="float" name="version1" value="2005.1">
16 <DESCRIPTION>version of code for model atmosphere</DESCRIPTION>
17 </PARAM>
18 <PARAM arraysiz="*" datatype="char" name="type" value="s">
19 <DESCRIPTION>type of model atmosphere (Spherical/Parallel)</DESCRIPTION>
20 </PARAM>
21 <PARAM arraysiz="*" datatype="char" name="filename" value="T27p5_logg3p25_R20000.sed">
22 <DESCRIPTION>model atmosphere filename</DESCRIPTION>
23 </PARAM>
24 <PARAM arraysiz="*" datatype="char" name="author_mod" value="martins">
25 <DESCRIPTION>model atmosphere creator name</DESCRIPTION>
26 </PARAM>
27 <PARAM datatype="int" name="Teff" value="27500">
28 <DESCRIPTION>effective temperature (K) ----- model atmosphere data</DESCRIPTION>
29 <VALUES null='-2147483648'/>
30 </PARAM>
31 <PARAM datatype="float" name="logg" value="3.25">
32 <DESCRIPTION>log10(gravity) (cgs) ----- model atmosphere data</DESCRIPTION>
33 </PARAM>
34 <PARAM datatype="float" name="mass" value="24.84">
35 <DESCRIPTION>mass (solar mass) ----- model atmosphere data</DESCRIPTION>
36 </PARAM>
37 <PARAM datatype="float" name="lum" value="5.33">
38 <DESCRIPTION>luminosity (log of solar luminosity) -- model atmosphere data</DESCRIPTION>
39 </PARAM>
40 <PARAM datatype="float" name="turbvel" value="5.0">
41 <DESCRIPTION>microturbulent velocity (km/s) - model atmosphere data</DESCRIPTION>
42 </PARAM>
43 <PARAM arraysiz="*" datatype="char" name="conv_alpha" value="irrelevant">
44 <DESCRIPTION>convection parameter (conva) ----- model atmosphere data</DESCRIPTION>
45 </PARAM>
46 <PARAM arraysiz="*" datatype="char" name="conv_ny" value="irrelevant">
47 <DESCRIPTION>convection parameter (convny) -- model atmosphere data</DESCRIPTION>
48 </PARAM>
```

