Automated spectral analysis of FGK stars for the Gaia-ESO survey

The goal of this short visit will be to prepare and coordinate the automated spectral analysis of the FGK stars that will be observed by the Gaia-ESO survey with the FLAMES/GIRAFFE spectrograph. Carlos Allende Prieto (IAC) and myself are co-managers of the corresponding WP10 within the Gaia-ESO consortium.

In particular, we will compare in detail the performances of three different methods already developed for the Gaia RVS data treatment : a Nelder-Mead algorithm, implemented by C. Allende, the MATISSE algorithm (Recio-Blanco et al. 2006) and a pattern-recognition method, DEGAS (Bijaoui, Recio-Blanco et al. 2011). The detailed performances of the three methods for spectra in the IR Calcium Triplet region, the wavelenght domain of the GIRAFFE setup HR21 will be analysed. This work extends a previous collaboration regarding the automated parametrization of Gaia/RVS data for the *Generalized Stellar Parametrizer-spectroscopy* algorithm of the Gaia/DPAC analysis pipeline. The performances of the three methods, as a function of the quality of the spectra and the parameter degeneracy will be explored, in order to be able to select the best results for each type of star. This will start the comparison tests between the different analysis nodes of the Gaia-ESO FGK stars data.

In addition, management issues regarding the organization of the Gaia-ESO WP10 activities will be discussed during the visit : work package substructure, coordination between the different analysis nodes, use of the photometric information, homogenization issues of the analysis, coordination with the UVES FKG analysis work package.

Alejandra Recio-Blanco
Curriculum Vitae

born on 20th October 1975 - A Coruña, Spain.
1 child

Professional address : Observatoire de la Côte d'Azur, BP 4229
F 06304 Nice cedex 4
Telephone : (33) 04 92 00 30 14   *Fax* : (33) 04 92 00 31 18
e-mail addres : arecio@oca.eu

Present position

- **Permanent position : Astronome-Adjointe, Conseil National des Astronomes et Physiciens (Section Astronomie)** since 01/09/2007 **Institute : Equipe Gaia, Laboratoire Cassiopée, UMR6202 (Observatoire de la Côte d'Azur)**

Previous employments

- **Laboratoire Cassiopée (OCA)**, UMR 6202, August 2004 - August 2007. **Postdoctoral position of the Eurpean Space Agency** (2 years) and **Poincaré−OCA Programme** (13 months)

- **Dipartimento di Astronomia (Padova University, Italy)**, April 2003 - July 2004, **post-doctoral position, Universita di Padovoa** (14 moths).

- **Instituto de Astrofísica de Canarias (IAC, Spain) et Padova University (Italy)** April 1999 - March 2003, **International PhD grant, IAC** (4 years)

Thesis supervisors :	Antonio Aparicio (IAC, Spain) & Giampaolo Piotto (Padova Univ., Italy)
Institutes :	IAC & Dipartimento di Astronomia (Padova University)
Thesis title :	*On the nature of hot horizontal branch stars in Galactic globular clusters*
Publication	ISBN 84-688-3024-0

- Refeered Publications : 41 (+ 3 submitted)

International responsibilities

- **Responsible of the Development Unit 823 "Generalized Stellar Parametrizer - Spectroscopy" since 2005** within the Coordination Unit 8 "Astrophysical Parameters" of the **Gaia Data Processing and Analysis Consortium**: automated determination of the atmospheric parameters and the chemical abundances of stars observed by the RVS

- **Responsible of the "GIRAFFE FGK Spectral Analysis"** for the **Gaia-ESO Large Public Survey**,

- **Co-responsible of the AMBRE project** (2009 -2013): OCA-ESO agreement for the automated parametrisation of all the high and intermediate resolution stellar spectra in the ESO archive (FEROS, UVES, HARPS, FLAMES).

- **Responsible within the PLATO Consortium of the Work Package-131130 Spectra Analysis**: constraints for the targets selection from the Gaia/RVS spectroscopy.

- **Member of l'Observing Programmes Committee - Stellar Panel** of the European Southern Observatory **(ESO)** (2006-2007)

National responsibilities (France)

- **Member of the Scientific Committee of the Programme National de Physique Stellaire** (2010-2014)

- **Member of the Observing Programmes Stellar Committee for the 2m Télescopes** (2010-2014)

Reseach Interests

- Galactic archaeology - Globular clusters - Thick disc formation

- Stellar evolution of low and intermediate mass stars - Chemical anomalies

- Automated spectral analysis methods

- Gaia mission and Gaia-ESO Large Public Survey

- Spoken languages :
Spanish, French, English, Italian, Portuguese