

SLGRID: spectral synthesis software in the grid

J. Sabater^{1,2}, S. Sánchez², and L. Verdes-Montenegro²

¹ Institute for Astronomy, University of Edinburgh, Edinburgh EH9 3HJ, UK

² Instituto de Astrofísica de Andalucía - CSIC, Apdo. 3004 18008 Granada, Spain

Abstract

SLGRID is a pilot project proposed by the e-Science Initiative of Andalusia (eCA) and supported by the Spanish e-Science Network in the frame of the European Grid Initiative (EGI). The aim of the project was to adapt the spectral synthesis software Starlight (Cid-Fernandes et al. 2005, MNRAS 358, 363) to the Grid infrastructure. Starlight is used to estimate the underlying stellar populations (their ages and metallicities) using an optical spectrum, hence, it is possible to obtain a clean nebular spectrum that can be used for the diagnostic of the presence of an Active Galactic Nucleus (Sabater et al. 2008, A&A 486, 73; Sabater 2009, PhD thesis). The typical serial execution of the code for big samples of galaxies made it ideal to be integrated into the Grid. We obtain an improvement on the computational time of order N , being N the number of nodes available in the Grid. In a real case we obtained our results in 3 hours with SLGRID instead of the 60 days spent using Starlight in a PC. The code has already been ported to the Grid. The first tests were made within the e-CA infrastructure and, later, it was tested and improved with the collaboration of the CETA-CIEMAT. The SLGRID project has been recently renewed. In a future it is planned to adapt the code for the reduction of data from Integral Field Units where each dataset is composed of hundreds of spectra. Electronic version of the poster at <http://www.iaa.es/~jsm/SEA2010>.

Acknowledgements

This work has been supported by the Red Española de e-Ciencia, the DGI Grant AYA2008-06181-C02 and the Junta de Andalucía grants P08-FQM-4205 and TIC-2302.