Título/Title:

How (un)realistic are the errors provided for stellar parameters and chemical abundances?

Orientador/Supervisor:

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Local do Estágio/Host Place:

IA-Porto.

Descrição/Description:

Derivation of precise and accurate stellar metallicity and chemical abundances is crucial for different fields of Astronomy: Galactic and stellar astrophysics, and exoplanetology. At the same time, the evaluation of the precision and accuracy of these parameters are based on the uncertainties derived for these parameters. Thus it is critical to derive realistic uncertainties for stellar metallicity and elemental abundances.

Several different methods exist to derive abundance uncertainties. The proposed project is aimed to develop a method that will provide the most realistic error estimation of chemical abundances by comparing already existing methods. A sample of 1111 solar-type stars observed with the very high-precision spectrograph HARPS will be used in the project. This sample is the most suitable for the proposed goal for which the stellar parameters and chemical abundances (and their uncertainties) have been derived by our group using the 'standard' EW methods.

Requisitos/Requirements:

The student is expected to have basic knowledge of computer programming (preferentially Python).