



ECOGAL: spectral classification of Tr14 YSOs and their mass accretion rates

Progetto di Ricerca - Research Project

The objective of the ERC Synergy project ECOGAL is to build a unifying predictive model of star and planet formation in the Milky Way. Based on a unique combination of theoretical modeling and multi-wavelengths observations, we will trace the properties of planet-forming disks back to their environment in different parts of the Galaxy, determine the physical processes that regulate the birth to stars and determine their key parameters, deliver a well calibrated galaxy template which can be used to study systems in the distant Universe. To reach these goals, ECOGAL unites out four research groups (at CEA, University of Bologna, Heidelberg University and INAF, in partnership with ESO, CNRS, Manchester University, and soon IRAM) to combine our unique expertise in observational astronomy, numerical astrophysics, instrument development, and astroinformatics, whose synergy will enable transformative progress in our understanding of our Galaxy.

One of the responsibilities of the Department of Physics and Astronomy of the University of Bologna (in short DIFA) within ECOGAL is the analysis of large bodies of observational data of young stellar objects with the goal of determining the chemical and physical properties of planet forming disks: the inheritance of these properties from the larger core scales and environment and how these are shaped by the interactions with forming planets.

The “borsista” will work as part of a team of researchers, postdocs and students on developing and applying data analysis techniques for large and/or complex observational data from VLT/MUSE of Trumpler 14.

Description of activities - Piano delle attività

The “borsista” will work at DIFA as part of a group of researchers, postdocs and students.

The “borsista” will work on the following project:

- Extraction of spectra from reduced MUSE data using the pySpecMUSE routines
- Prune the spectral database from contaminated or otherwise erroneous spectra
- Apply the SAPSAL deep learning framework to extract classification and accretion properties