



TÉCNICO
LISBOA



Contribution ID: 1

Type: **not specified**

Asteroseismology: Studying angular momentum transport in red giant stars

Tuesday, 7 July 2020 14:05 (15 minutes)

Computational and analytical models predict several mechanisms of transport of angular momentum (AM) capable of describing the physical phenomena in stars interiors through their evolution. However, recent measurements of core rotation rates of red giants revealed that the mechanisms occurring inside stars, responsible by transfer of AM, are still largely unknown.

This project consists in choosing a set of bench mark models from the evolution of a $1.6 M_{\odot}$ star, and implement AM transfer mechanisms, using the open source Modules for Experiments in Stellar Astrophysics, MESA.

The main goal is to give more insight into the impact of this processes in the stars internal structure, mainly in their asteroseismic parameters, which has not been extensively explored until now. To do so, we are working on imposing constraints and even exclude some of this mechanisms. The project focus on Tayler-Spruit Dynamo (Spruit 2002) and Fuller Mechanism (Fuller et al. 2019), that provide more efficient AM transport than most other mechanisms. One subsequent step involves calibrating the stellar models using high precision asteroseismical diagnosis to make comparisons with future observations.

Primary author: BORDADÁGUA, Beatriz

Presenter: BORDADÁGUA, Beatriz