





IAA Asteroseismology team:

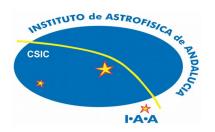
How can we contribute to/benefit from an SRC







- 1. Asteroseismology Data
- 2. Goals
- 3. Challenges
- 4. What can we do for SKA-Link
- 5. What SKA-link can do for us
- 6. Opportunities to collaborate



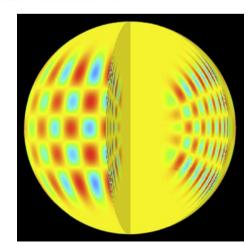




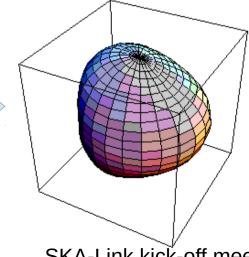
Asteroseismology Data

Structure and Oscillation models

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ESAMSk version v3.2.2 lagr collec 2 4 rg no diffus, or Favrier 2017 00r64 hysique utilisée: etat eff, ope yveline, com jej, ppcnob, ctes 94, NACME, rot 8 olaire gr. lie, ets. edding, perte ext, pertv. B. diffu, pp. difft_nu, diffu_8 18 H Ho3 Ho4 Cl2 Cl3 M14 M15 016 017 5328 200 17 44 18 8
325930555337E+03 0,000000000000E+00 0,0000000000E+00 0,671682343064E-08 1,98919000000E+33
6.9599000000E+10 3.84500000000E+33
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MUDEL -0210-VV-81301W00101/000001UC00V-10U.00V

SKA-Link kick-off meeting. Granada







Asteroseismology Data

Observations of light curves

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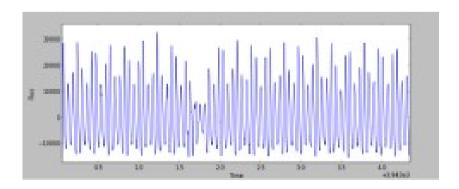
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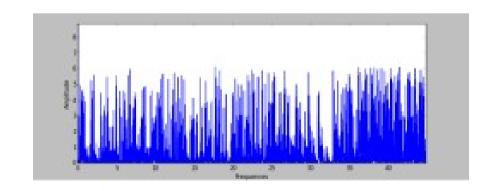
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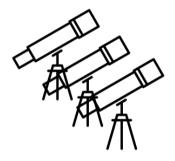






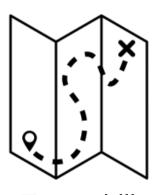


Goals (Best practices)

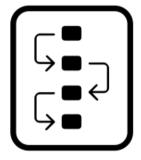


Reproducibility





Traceability



Workflows







Challenges

- Provide an automatic time series analysis system where the stellar frequencies are detected and analyzed.
 - PLATO goal: Characterization of oscillations in the hosting planet stars.
 - Handling massive data from observations and masive data from theoretical models.
 - Treatment of very long time series of huge number objects at the same time. (137.000 L.C. every 600 seconds)
 - Universal access to data and methods (TOUCAN project) within Virtual observatory framework.



Original Team Activities

Scientific Developments

Non standard time series analysis.

Numerical stellar interior models including rotation.

Technical items

Big Data.
Depth learning
Machine learning.
Data mining
Cloud computing.







What SKA-link can do for us

- Learning new e-Science techniques for a reliable and transparent work that can be applied to the study of stellar interiors through asteroseismology techniques.
 - Knowing first hand what the SKA Regional Centres will be, and how this can be of interest beyond radioastronomers
 - Exploring whether we can, on our side, contribute or support an SRC at the IAA



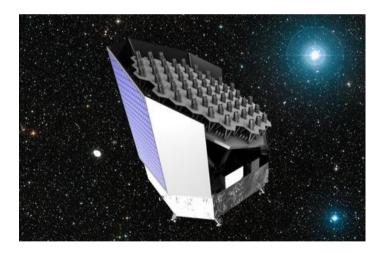


Opportunities to collaborate

SRC!!!













Ideas and proposals

Integration of theoretical models of stellar oscillations within the Virtual Observatory to do classifications using Machine Learning Algorithms.

Massive data analysis of PLATO (Using Data Mining techniques). Which will lead to fulfill the main objective of the mission: Characterization of the nearest hosting planets stars.