

Institute of Space Sciences

Institute of Space Sciences (ICE, CSIC)
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Spain
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Barcelona, September 15th, 2021.

Postdoctoral position in Solar/Nuclear Astrophysics

The Sun is a fundamental benchmark for stellar physics. The detailed knowledge about its interior structure thanks to helioseismology and the sensitivity of solar neutrino fluxes to the conditions in the solar core provide the basis for fundamental tests of models of solar and, by extension, stellar physics. The recent discovery of solar CN neutrinos by Borexino opens up new possibilities for solar and nuclear physics, and helps setting up the roadmap for future experimental solar neutrino programs at neutrino and direct dark matter experiments. It is necessary to develop solar models to provide a reference framework against which to interpret the wealth of experimental results and , test non-standard solar/stellar and astroparticle physics, and help design the roadmap for future developments.

The Institute of Space Sciences (ICE, CSIC) in Barcelona, Spain, is seeking applications for a 2-year Postdoctoral position to work with A. Serenelli in Solar/Nuclear Astrophysics within the framework of the Horizon 2020 programme ChETEC-INFRA: Chemical Elements as Tracers of the Evolution of the Cosmos. ChETEC-INFRA is an INFRAIA H2020 programme, formed by more than 30 participating institutions across Europe involving facilities for nuclear astrophysics, high performance computing and telescopes.

The successful candidate will play a leading role within the ChETEC Work Package dedicated to solar physics, in particular nuclear astrophysics in the Sun. Activities will involve, among others: establishing a new set of standard reference for key nuclear reactions for solar evolution and solar neutrino production, development of new generation of solar models. The candidate will be encouraged to take part in other ChETEC activities.

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The candidate should:

- Have a PhD in physics, preferably nuclear astrophysics or stellar astrophysics, awarded not more than 4 years before the start of the position
- Good background in the cross discipline (stellar astrophysics or nuclear astrophysics)
- Good programming level in Fortran and Python
- Good level of presentation skills and scientific writing

The ICE is located at the UAB Campus in Cerdanyola del Valles, 15kms from Barcelona. It is a CSIC Institute with a staff of ~90 persons and carries out fundamental and technological research in several areas of astronomy, astrophysics, fundamental physics and Earth observation.

Applicants should submit a CV, full list of publications (or library ADS link), and have two reference letters sent to Aldo Serenelli at a.serenelli@csic.es.

Review of applications will start on **November 15th 2021** and the position will be open until filled. Starting date can be as early as **February 1st, 2022**, but later dates can be arranged.

For further inquiries, contact A. Serenelli a.serenelli@csic.es