

Locarno, April 12, 2019

# ISTITUTO RICERCHE SOLARI LOCARNO (IRSOL)

## UNIVERSITÀ DELLA SVIZZERA ITALIANA (USI)

### **PhD and Postdoctoral Position in Solar and Computational Physics**

The Istituto Ricerche Solari Locarno (IRSOL), an associate of the Università della Svizzera italiana (USI) and its Institute of Computational Science (ICS), seeks to appoint a postdoctoral research associate (PDRA) and a postgraduate researcher as a PhD candidate (PGR) for carrying out a research project in the field of computational solar physics. IRSOL is a small solar observatory, specialized in high precision polarimetry. The main activities comprise polarimetry of the Sun, theoretical spectroscopy, and numerical radiation magnetohydrodynamic simulations of the solar atmosphere. The doctoral thesis shall be carried out in cooperation with USI/ICS or possibly with an other Swiss University (SU). We also foresee cooperation with the Swiss Supercomputing Center (CSCS) and international partners.

#### **Your tasks**

The project foresees the post-processing of already existing, and the production of new simulation data for carrying out research on various topics of solar physics related to future observations with large solar telescopes and to ongoing observational programs at IRSOL. These research activities shall carry on magnetohydrodynamic waves and turbulence, and spectropolarimetric line formation. Beyond that, and depending on interests and skills, we plan to further develop our simulation tools and computational methods with regard to supercomputing and the future era of exa-scale computing. We also plan for universal access of our simulation data and analysis tools.

#### **Your profile**

We seek a PhD candidate (PGR) who holds a master diploma in physics or applied mathematics or computational sciences. He or she should have a good background in physics and numerical methods and be interested in astrophysics and should have experience in programming and be proficient in written and spoken English and have excellent communication skills. Likewise are the requirements for the PDRA position for which the candidate must hold a PhD in the field of astrophysics or computational sciences or applied mathematics and have a strong interest in solar physics.

#### **Further important information**

The PhD will be carried out jointly at IRSOL and USI or at an alternative Swiss university (SU). The PhD degree will be awarded by either USI under the supervision of Prof. Rolf Krause or by another SU. The project is foreseen to be mainly carried out at IRSOL under the supervision of Dr. O. Steiner and possibly at USI or alternative SU. There is some flexibility with regard to the workplace, which shall be mainly at IRSOL in Locarno-Monti but can partly include USI or another SU. The project is funded by the Swiss National Science Foundation (SNSF) for a time period of 36 months. Salary corresponds to the standards of the SNSF.

Applications should be sent by email to Dr. O. Steiner ([steiner@irsol.ch](mailto:steiner@irsol.ch)) and should include the following material: 1) Curriculum vitae; 2) statement of research interest; 3) digital copies of the master diploma including course grades; 4) contact information for two potential professional references; 5) for the PDRA position only: digital copies of the PhD diploma and the PhD thesis. Please quote as subject title 'PDRA position' or 'PGR position', respectively. Review of applications will start soon and continue until the position is filled. Questions concerning the advertised position should be directed to Dr. Oskar Steiner.