



The
University
Of
Sheffield.

School of
Mathematics
and Statistics

PhD Project at SP2RC

A University of Sheffield **PhD projects** are available at the Solar Physics and Space Plasma Research Centre (SP²RC) that spans across the School of Mathematics and Statistics, the Department of Automatic Control and Systems Engineering and Department of Mechanical Engineering, in the following areas:

- Magnetoseismology of the solar atmosphere (from photosphere to corona)
- Dynamics of MHD jets (from spicules to x-ray jets)
- Dynamics of tornadoes on the Sun: from nano- to giant MHD swirls
- MHD wave theory with solar astrophysical applications
- MHD wave observations and Solar Magneto-Seismology (SMS)
- MHD and plasma instabilities with applications so solar and solar-terrestrial physics
- Heating of the solar atmosphere: waves, reconnection, etc.
- MHD and collisionless shocks in the magnetosphere
- Radiation belt modelling
- Space Weather (flare and CME forecasting, arrival, etc.)
- High-speed stereo Schlieren imaging and signal processing
- Applying Machine Learning (ML) and AI techniques to solar and solar-terrestrial physics
- Novel joint ground-based and satellite observations of the Sun
- Numerical modelling (HPC and GPU computing) of MHD processes in the solar atmosphere

SP²RC has a wide expertise in advanced analytical/numerical modelling and analysing high-resolution observations obtained by cutting-edge ground-based instruments and space satellites. The studentship may be supplemented by income from assistance in undergraduate tutorials.

Applications are invited from Mathematics, Physics, Engineering or Computer Sciences students who have graduated or expect to graduate with a first or upper-second class degree.

The projects are available **from October 2019**. The screening of applications is continuous with a **closing date of 26 April 2019**. Applications after that date may also be considered until the position is filled.

For additional information, please contact:

Prof Robertus von Fay-Siebenburgen (Deputy Head of SP2RC, SoMaS), e-mail: Robertus@sheffield.ac.uk or, alternatively you are encouraged to approach any academic member of the Centre (<http://sp2rc.group.shef.ac.uk/staff.htm>).