



Master-Thesis in Physics/SES

Geometry of transient magnetic structures in IP space and related Forbush decrease effects

Motivation and Aims:

Galactic cosmic rays have a major impact on interplanetary space and planetary surfaces and are of utmost importance for space travel. They are modulated by the activity of the Sun – during high solar activity their number is reduced. On short time scales of several days, the reduction in galactic cosmic rays, so-called Forbush decreases (FD), are observed, which are caused by the most violent eruptions in the solar system – coronal mass ejections (CMEs, a.k.a. solar storms). Within the EU project *ForbMod* (led by M. Dumbovic) we aim to unravel how galactic cosmic rays are influenced by solar storms in the inner solar system (Sun to Mars) by developing a new model and utilizing a number of spacecraft and planetary observation, including those by Mars Curiosity Rover.

Work:

For reaching this aim, 3D reconstructions and analyzes of CMEs need to be performed, using remote sensing (EUV, white-light) and combined in-situ plasma and magnetic field data. The results will serve as valuable input for the development of the FD model.

Profile required:

We are searching for qualified Master students in *Physics* with focus on „Astrophysics“, „Geophysics“, „Space Physics and Aeronomy“ or Master students in *Space Sciences and Earth from Space*.

We seek students with

- good knowledge in solar and/or space physics
- good knowledge of programming
- strong motivation and interest to be part of a scientific project and team

For students with marks above average, the work will be supported by a stipendium of **500 €** per month for the duration of 6 months (+3 optional).

Planned start: November 2017.

Contact:

With deadline October 2, 2017, send your complete application including a) letter of motivation, b) CV c) standard transcripts from University (as pdf), via email to:

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