

Master Thesis in Experimental Physics

Characterisation of a Prototype of a Novel Optical Vector Magnetometer

We are working on

the development of a prototype of a novel optical vector magnetometer by utilising the coherent population trapping phenomenon in the atomic vapour of rubidium. The prototype is based on our scalar magnetometer, the Coupled Dark State Magnetometer. This device was especially designed for scientific space missions and is already on-board of 4 scientific satellites and will be launched to Jupiter in April of 2023.

The Master Thesis

will include the implementation of a new laser diode and laser current source for the laboratory setup of the Magnetometer Lab at the Institute of Experimental Physics. This setup will be used for the characterisation of the vector magnetometer prototype. This testing will be performed at the Institute of Experimental Physics of TU Graz, the Space Research Institute of the Austrian Academy of Sciences (located in Graz) as well as the Geomagnetic Conrad Observatory of Geosphere Austria.

We offer:

- Diversified tasks in the field of laser optics, spectroscopy, electrical and mechanical engineering as well as programming
- Interdisciplinary team due to the cooperation with the Space Research Institute
- Insights in the development of space qualified magnetometers/hardware
- Measurement campaigns at the Conrad Observatory

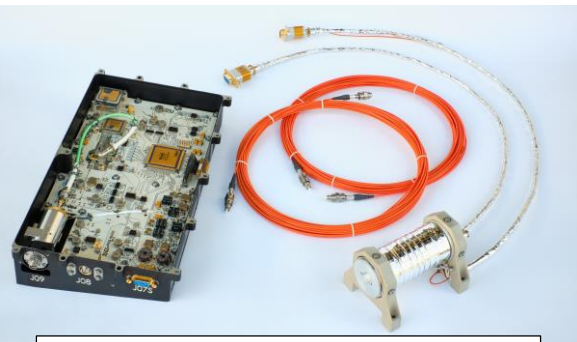
We are looking

for a motivated Master student, who is interested in joining our team.

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Merritt coil system at the
Conrad Observatory



Coupled Dark State Magnetometer
for ESA's JUICE mission