

Master Thesis in Space Instrumentation: CubeSat Atmosphere Mass Spectrometer

Micro satellites of the CubeSat format are becoming more capable and versatile and they are used increasingly for research in the space environment, in Earth orbit and are proposed for applications almost everywhere in the solar system.

We are planning to adapt our neutral gas mass spectrometers for atmospheric research to be compatible to the CubeSat platform, i.e., to fit within 1 CubeSat unit.

The Master thesis comprises the design of the mass spectrometer itself, define the requirements on high-voltage and data acquisition electronics, and estimate the total resources needed (mass, power, volume, data rate, ...) for this instrument, and prototyping of critical units. Initial application of the CubeSat mass spectrometer is foreseen for the extended Earth atmosphere.

We are looking for a talented and motivated person who enjoys instrument development. Knowledge of mass spectrometry, electronics, and instrumentation would be of advantage but are not required. The design of the mass spectrometer requires a basic knowledge of numerical simulation methods and experience in programming would be advantageous.

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