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OVERVIEW ABOUT THE ENMAP SCIENCE PERSPECTIVES

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THEME: Airborne and Innovative Remote Sensing Platforms and Techniques. Special session: "The EnMAP Imaging Spectroscopy Mission and its science perspectives".

KEY WORDS: Imaging spectroscopy, future missions, EnMAP

ABSTRACT:

The Environmental Mapping and Analysis Program (EnMAP) is a joint venture of a consortium of German Earth Observation Research Institutions. The DLR-Agency is the project manager, the GFZ in Potsdam has the scientific lead, OHB-Systems AG is the industrial prime for the sensor and bus, and the DLR-DFD is responsible for the ground segment. EnMAP is designed for the retrieval of bio-, geochemical and physical parameters characterising the Earth surface for applications such as agriculture, land-use, water systems, soil science, and geology.

The core payload of the EnMAP satellite is an imaging spectrometer covering the 420-2450 nm spectral window. It records 242 contiguous spectral bands at a spectral resolutions between 6.5 and 10 nm with a signal to noise ratio of >500:1 in the visible and near-infrared and >150:1 in the shortwave infrared. The ground sampling distance is 30 m x 30 m and the swath of 30 km. The mission is now in phase D (construction), with launch planned for early 2018. Expected mission lifetime is 5 years.

Recent activities have been focused on the support of industrial developments and the final consolidation of the mission concept. A scene simulator generating EnMAP-like data under realistic conditions has been implemented. It enables the definition of optimal instrument configurations for radiometric, spectral and geometric parameters as well as the evaluation and profiling of data-processing algorithms.

An EnMAP-specific software environment for the interactive processing of data is also being jointly designed by the Geomatics lab of the Humboldt University of Berlin and the GFZ. Tools for calibration, pre-processing and the derivation of higher-level biophysical products are to be included in this software (available on http://www.enmap.org/).

In this talk we will provide an overview of the mission status including both technical developments and preparatory activities for the implementation of the EnMAP scientific program.