

Scientific preparation of the EnMAP imaging spectroscopy mission

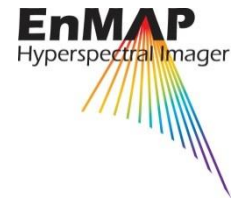
*Helmholtz Centre Potsdam
 GFZ German Research Centre for Geosciences*

Abstract:

The scope of the project is the scientific preparation of the hyperspectral satellite mission EnMAP (Environmental Mapping and Analysis Program). The scientific lead of the mission lies with the Remote Sensing and Geoinformatics section at GFZ Potsdam, supported by a Core Science Team (ECST). Tasks of the ECST include (i) updating the EnMAP Science Plan, (ii) organising and conducting workshops and summer schools, (iii) coordinating networking and dissemination activities, and (iv) developing algorithms for processing and analysing hyperspectral data as well as implementing them into the free software package EnMAP-Box, developed in the frame of the EnMAP scientific preparation program.

Within the project, the focus of the work at GFZ Potsdam in the scientific preparation of the EnMAP mission focussed on:

- Collection of science airborne campaigns, in-situ and laboratory databases for scientific development and evaluation of diverse mineralogical compositional mapping approaches.
- Software developments for data pre-processing, data simulation and data quality assessment including the development of the EnMAP-Box module EnPT and the atmospheric correction module SICOR.
- Software developments in the application fields geology and soils including the EnMAP-Box modules EnGeoMAP and EnSoMAP.
- Scientific coordination of the EnSAG and activities for community building and training, including the development of HYPERedu, an online learning platform for hyperspectral remote sensing.



ECST Phase III – Geology and soils, Coordination

Duration: 01.01.2016 – 31.12.2019

EO Data Source: simulated EnMAP, Sentinel-2, Hyperion, HySpex, AISA, AVIRIS-NG

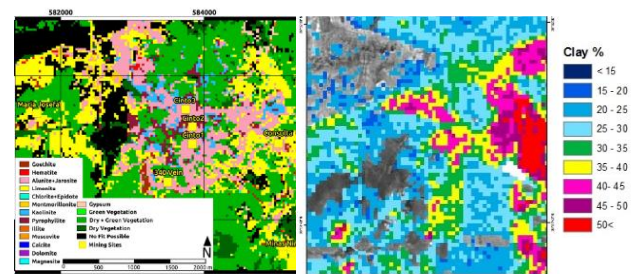
Support Program: EnMAP Utilization Preparation

Contact:

Helmholtz-Zentrum Potsdam
 Deutsches GeoForschungsZentrum GFZ
 Prof. Dr. Luis Guanter / Dr. Sabine Chabrillat
 +49 331-288-1190
 firstname.lastname@gfz-potsdam.de

<http://www.enmap.org/>

<https://www.gfz-potsdam.de/en/section/remote-sensing-and-geoinformatics>



Top mineralogical mapping (left) and soil clay content mapping (right) on simulated EnMAP data (30 m) based on hyperspectral airborne image data.

EnSAG Phase II: Scientific preparation of the EnMAP imaging spectroscopy mission

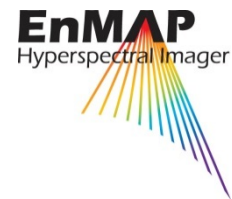
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Abstract:

The scope of the project is the scientific preparation of the hyperspectral satellite mission EnMAP (Environmental Mapping and Analysis Program). The scientific lead of the mission lies with the Remote Sensing section at GFZ Potsdam, supported by a Science Advisory Group (EnSAG). Tasks of the EnSAG include (i) developing and updating the EnMAP Science Plan, (ii) organising and conducting workshops and summer schools, (iii) coordinating networking and dissemination activities, and (iv) developing algorithms for processing and analysing hyperspectral data as well as implementing them into the free software package EnMAP box, developed in the frame of the EnMAP scientific preparation program.

Within the project "ENSAG Phase II", the successful work of the EnSAG is continued by addressing new scientific challenges in the field of hyperspectral remote sensing. More specifically, the focus of the work at GFZ Potsdam in the scientific preparation of the EnMAP mission phase II comprises:

- Software developments for validation and simulation of EnMAP data
- Software developments for hyperspectral data analysis in the research fields geology and soils, with a particular focus on the detection of rare Earth elements, noble metals and mine waste, mapping of soil properties and characterisation of erosion states
- Scientific coordination of the EnSAG and the activities for community building and training



EnSAG

Duration: 01.01.2013 – 31.12.2015

EO Data Source: EnMAP, Sentinel-2, Hyperion, HySpex, AISA

Support Program: EnMAP Utilization Preparation

Contact:

Helmholtz-Zentrum Potsdam
Deutsches GeoForschungsZentrum GFZ
Prof. Dr. Luis Guanter
+49 331-288-1190
guanter@gfz-potsdam.de

<http://www.enmap.org/>