

Developing the EnMAP Managed Vegetation Scientific Processor

Ludwig-Maximilians University Munich

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 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 and open software package EnMAP-Box, developed in the frame of the EnMAP scientific preparation program.

At the Department of Geography of the LMU the following goals are targeted:

- **Conduction** of science campaigns for derivation of crop surface characteristics in agricultural areas from hyperspectral remote sensing data.
- **Collection** of *in-situ* data for scientific development and evaluation of diverse agricultural algorithms, including forward modeling of radiative transfer models, analytical spectral integrals, physically-based (inverse) retrievals and the hybrid EnMAP vegetation processor.
- **Compilation** of teaching materials and EnMAP-Box tutorials for all agricultural tools and supporting the close integration of the hyperspectral user community contributions to workshops and summer schools.
- **Continuation** of algorithm development for the derivation of agriculturally relevant vegetation traits from hyperspectral data and their implementation into the EnMAP-Box software.



ECST Phase III – Agriculture

Duration: 01.01.2017 – 30.06.2020

EO Data Source:

EnMAP, DESIS, AVIRIS-NG, HySPEX, HyMAP

Support Program:

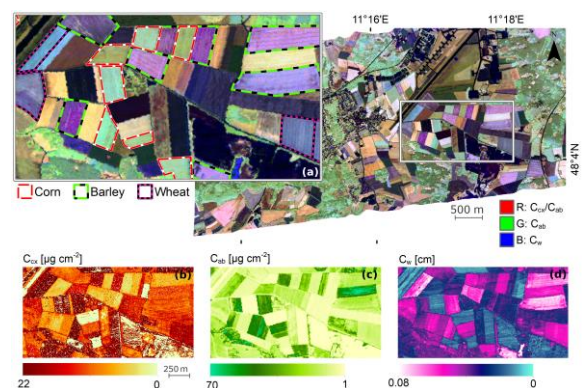
EnMAP Utilization Preparation

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

https://www.geographie.uni-muenchen.de/departement/fiona/forschung/projekte/index.php?projekt_id=240



RGB false color imagery combining vegetation carotenoid (C_{α}), chlorophyll (C_{ab}) and water content (C_w). The contents were simultaneously retrieved from hyperspectral AVIRIS-NG data using radiative transfer modelling and spectral integrals of distinct absorption features (from Woche et al. 2020).

EnSAG Phase II: Monitoring the Phenological Development of Agricultural Crops

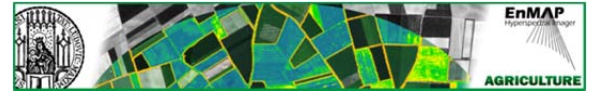
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Abstract:

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.

At the Department of Geography of the Ludwig-Maximilian University Munich the following goals are targeted:

- Conduction of science campaigns for improved derivation of phenological information of agricultural crops from hyperspectral remote sensing data
- Collecting in-situ data for scientific evaluation as well as for the provision of teaching material
- Continuation of the close integration of the hyperspectral user community through contributions to workshops and summer schools
- Development of algorithms for the derivation of agriculturally relevant parameters from hyperspectral data and their implementation into the EnMAP box software.



EnSAG – Agriculture

Duration: 01.05.2013 – 30.09.2016

EO Data Source: EnMAP, Sentinel-2, RapidEye, Landsat 8 OLI

Support Program: EnMAP Utilization Preparation

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