Supported by:
Federal Ministry for Economic Affairs and Energy
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Monitoring Vegetation under Global Change

Humboldt-Universität zu Berlin

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

Within the project "EnSAG Phase III", the successful work of the EnSAG is continued by addressing new scientific challenges in the field of hyperspectral remote sensing. The Geography Department of Humboldt-Universität zu Berlin investigates the following tasks:

- Regional scale analysis of simulated multi-temporal EnMAP data for mapping and monitoring of different (semi-) natural ecosystems
- Development and evaluation of innovative training strategies towards spatially and temporally generalized machine learning models
- Integration of Landsat and Sentinel-2 data into EnMAP-based image analyses to improve the characterization of Essential Biodiversity Variables, e.g. vegetation types, biophysical properties, phenology and ecosystem disturbances
- Implementation of evaluated algorithms as user-friendly applications in the EnMAP-Box and development of educational modules for the HyperEDU online learning platform

EnMAP Hyperspectral Imager

ECST Phase III – Natural Ecosystems and Ecosystem Transitions

Duration: 01.01.2017 – 30.11.2020

EO Data Source: simulated EnMAP, AVIRIS, Landsat, Sentinel-2

Support Program: EnMAP Utilization Preparation

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http://www.enmap.org/

https://hu.berlin/eo-lab

Vegetation succession one year after a fire in the Pepperwood Preserve, California

Supported by:
Federal Ministry for Economic Affairs and Energy
on the basis of a decision by the German Bundestag

EnSAG Phase II – Natural Ecosystems and Ecosystem Transitions

Humboldt-Universität zu Berlin

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. The Geography Department of Humboldt-Universität zu Berlin investigates the following tasks:

- Environmental gradients and ecosystem transition
- Development of a more accurate and operational mapping gradual ecosystem changes over space and time by means of hyperspectral remote sensing data and machine learning algorithms
- Linking qualitative and quantitative mapping approaches for mapping land use and cover, including the development, evaluation and implementation of adapted approaches for support vector machines for regression and classification
- Implementation of all successfully evaluated algorithms in the EnMAP-Box as standardized and user-friendly implementations

EnSAG – Ecosystem Transitions

Duration: 01.06.2013 – 31.05.2016

EO Data Source: EnMAP, Landsat, EO-1 Hyperion, HyMap, AISA

Support Program: EnMAP Utilization Preparation

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http://www.enmap.org/

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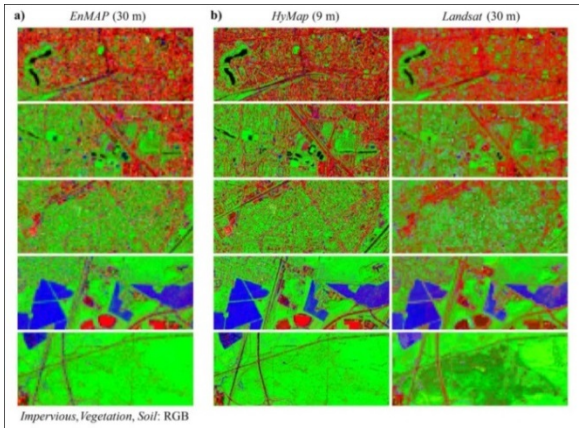

RGB composite combining impervious, vegetation and soil fractions derived from (a) EnMAP, and (b) HyMap and Landsat. RGB mixtures indicate mixtures of the displayed VIS components, black areas relate to other surfaces (e.g., water bodies). Dark colors indicate extensive underestimation of relatively pure areas (e.g., dark green areas in the results achieved on Landsat). (from Okujeni et al. (2014). Remote Sens. Environ.)