

Poster

EnMAP-Box 3 – a QGIS Plugin to explore and process imaging spectroscopy data

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The EnMAP-Box is designed to process imaging spectroscopy data and particularly developed to handle data from the upcoming EnMAP (Environmental Mapping and Analysis Program) sensor. It serves as a platform for sharing and distributing algorithms and methods among scientists and potential end-users. Starting with version 3.0, the EnMAP-Box is designed as a free and open source Python plug-in (<https://bitbucket.org/hu-geomatics/enmap-box>) for the geographic information system QGIS. The main goals are to provide (i) state-of-the-art applications for the processing of high dimensional spectral and temporal remote sensing data and (ii) a graphical user interface (GUI) that enhances the GIS oriented visualization capabilities in QGIS by applications for visualization and exploration of multi-band remote sensing data. Therefore, the algorithms provided in the EnMAP-Box will be of high value for many users, especially those working with multi- and hyperspectral EO data.

The EnMAP-Box efficiently combines advantages of QGIS (e.g. for visualization, vector data processing), packages like GDAL (for data IO) and abundant libraries for Python (e.g. scikit-learn for EO data classification). The plug-in consists of (i) a GUI for hyperspectral data visualization and e.g. spectral library management, (ii) a set of algorithms, and (iii) a high-level abstraction application programming interface, which, for example, is already used by other members of the EnMAP project to provide their algorithms and GUI based applications.

The EnMAP-Box can be started from QGIS or stand-alone. The algorithms are integrated in the QGIS processing framework, thus they may be used in the QGIS graphical model builder and chained with algorithms provided by other QGIS plugins. Our poster illustrates the concept of the EnMAP-Box and how it efficiently integrates various FOSS components.