Eduspace is freely available via

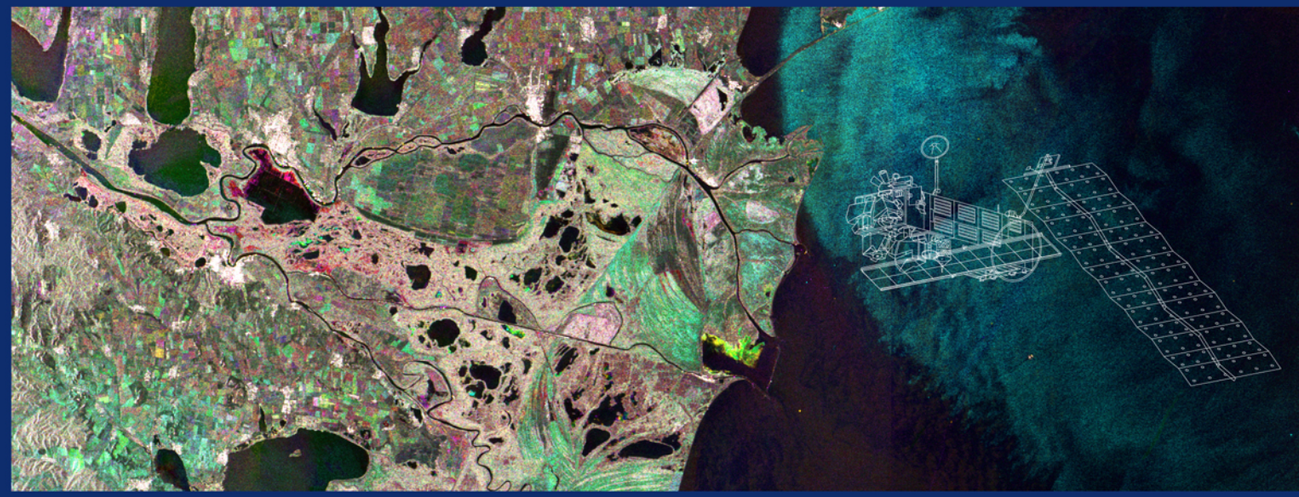
www.esa.int/eduspace

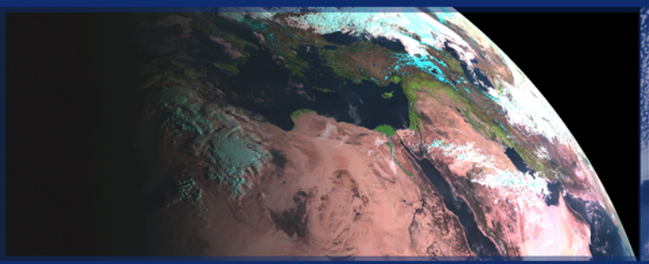
European Space Agency – ESRIN | Via Galileo Galilei, I - 00044 Frascati, Italy

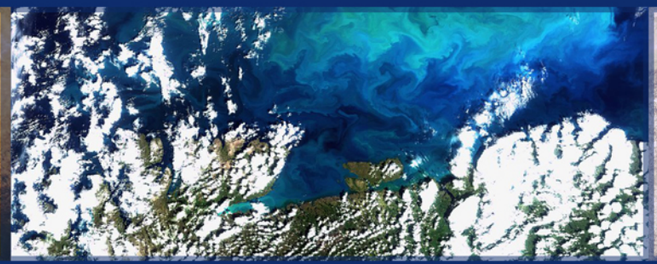
email: **eduspace@esa.int**

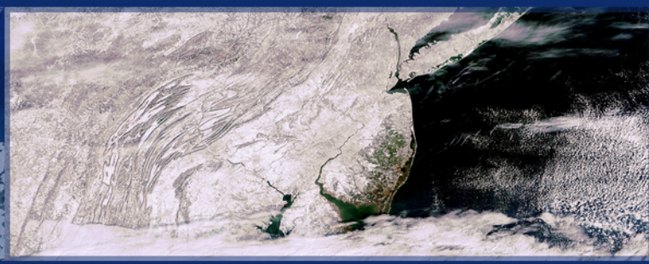
eduspace

→ EARTH OBSERVATION FOR STUDENTS









EDUSPACE

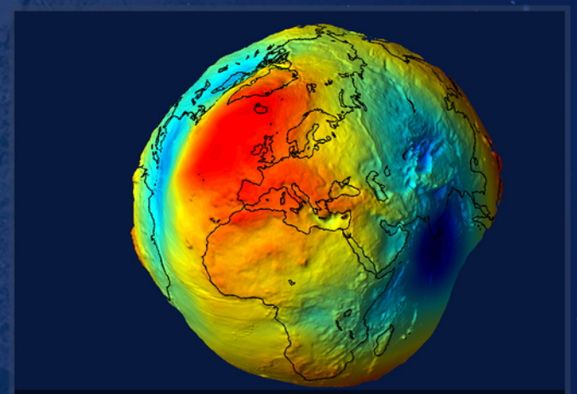
Eduspace, a multi-lingual e-learning platform for Earth observation methods and applications, was launched in 1998 in cooperation with EURISY to make the achievements of the space age usable for education.
The aims are to support teachers in their task of preparing students to cope with environmental problems, both now and in the future, and to provide students with knowledge about the wide variety of applications possible with Earth observation methods. The website is mainly targeted at secondary school level, but some material is also suitable for college students or undergraduates.

EDUSPACE CONTAINS

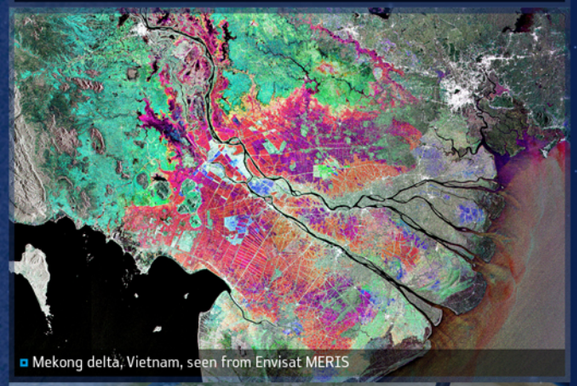
- Theoretical material in Earth observation
- Practical exercises in satellite data interpretation
- Tools: free image processing and Geographic Information System (GIS) software
- Data: free satellite data

EDUSPACE THEORY

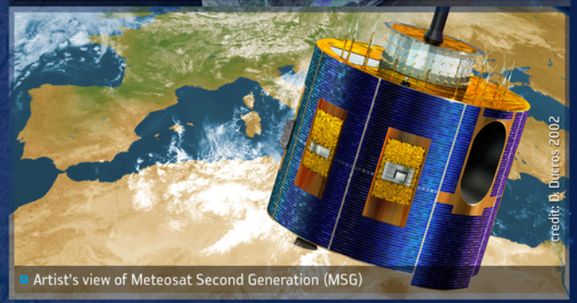
EDUSPACE contains a wealth of theoretical training material on the principles of remote sensing and digital image processing, the history of Earth observation, Earth observation satellites and orbits.



The geoid as seen by ESA's GOCE satellite



Mekong delta, Vietnam, seen from Envisat MERIS



Artist's view of Meteosat Second Generation (MSG)

EDUSPACE PRACTICAL

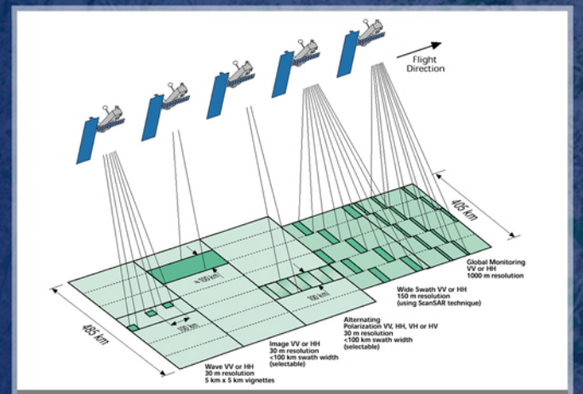
Practical exercises in the form of case studies provide the opportunity for students to use software to process real data for real-life applications. The case studies focus on different geographic areas, situated worldwide, and different thematic domains, such as global change (climate, deforestation) and disaster monitoring (earthquakes, floods).

EDUSPACE TOOLS

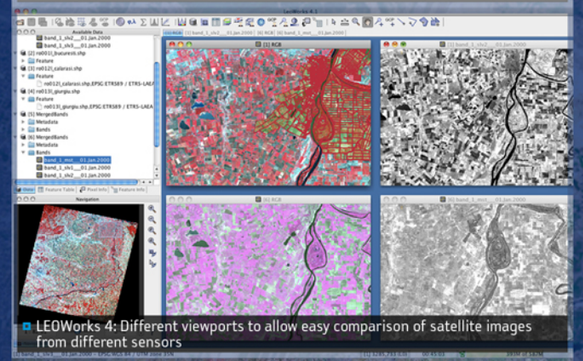
Image processing software is freely available to download from Eduspace. The primary software used is LEOWorks, an educational image processing and GIS toolbox developed under ESA contract specifically for Eduspace.
LEOWorks provides all the main image processing functions such as spectral enhancement, geometric correction, classification and image arithmetic. It also has GIS functionality enabling students to integrate or create vector layers and develop maps.

EDUSPACE DATA

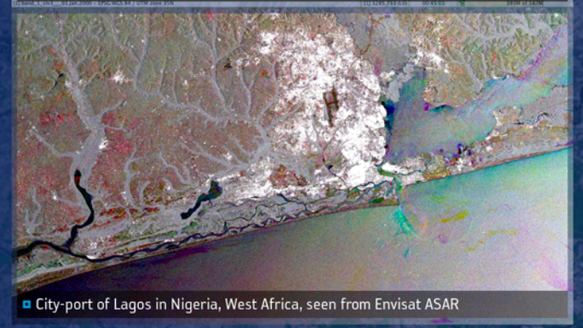
Data used for the exercises are freely available to download from the case study pages. The data mainly include satellite imagery from sensors such as Envisat ASAR, MERIS, ERS SAR and Landsat TM, ETM. There are also links to catalogues and galleries of free data.



ASAR operation modes



LEOWorks 4: Different viewports to allow easy comparison of satellite images from different sensors



City-port of Lagos in Nigeria, West Africa, seen from Envisat ASAR