10 years of Envisat data help to illuminate ocean processes

9 March 2022

A decade after Envisat beamed its final image to the planet, the pioneering ESA mission is continuing to foster improved understanding of Earth's systems.

European scientists are applying a phenomenon of physics called the Doppler effect to Envisat imagery with the aim of revealing sea surface wind velocity, wave intensity and the movement of ocean currents in exquisite new detail.

These high-resolution insights could support ground-breaking science in the areas of meteorology, oceanography and climatology.

Discovered some 180 years ago, the Doppler effect describes the shift in frequency of a light or sound wave, in relation to an observer that is moving relative to its source.
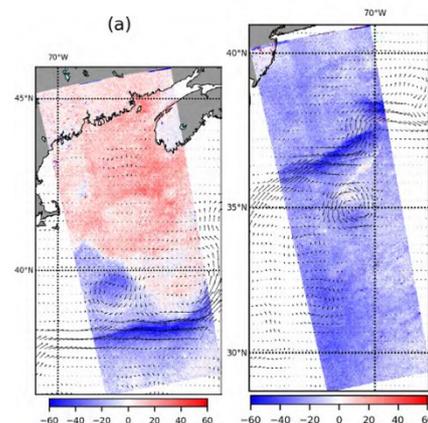

The phenomenon has long been used by remote sensing experts to elucidate the behaviour of the oceans and now a team of scientists at the Norwegian Meteorological Institute are building on this work by using Envisat synthetic aperture radar data (SAR) to test and develop an improved Doppler shift processing method.

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Introducing Mirko Albani

4 March 2022

In this short interview, ESA's Heritage Missions Programme Manager describes what he likes most about ESA's long term archive of satellite mission data and his role in the programme.

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MIRKO ALBANI
HERITAGE SPACE
PROGRAMME AND
MISSIONS MANAGER
EUROPEAN SPACE AGENCY

Highlight on:

New open-source Python library improves rapid mapping services

17 March 2022

In emergency services, rapid response is paramount. ICube-SERTIT's Rapid Mapping Service provides near real-time delivery of geo-information to help emergency services respond quickly to disasters such as flooding, fires and landslides.

A new Python open-source library, called EOReader, speeds up this mapping response by enabling the easy opening of imagery from multiple satellite sensors, both optical and synthetic aperture radar (SAR).

EOReader Optical Band Mapping
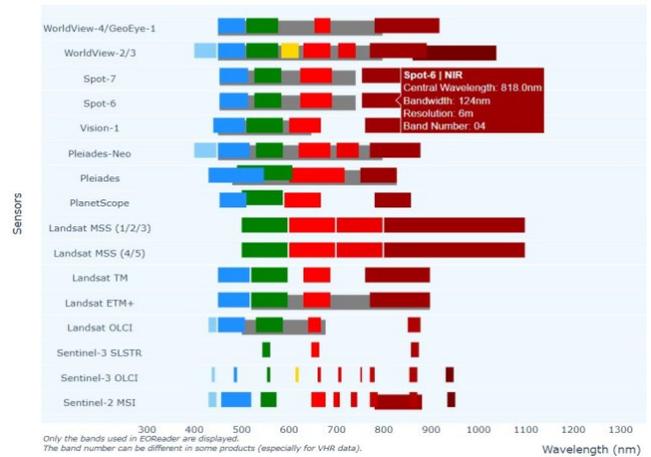
EOReader can be used to load satellite bands, both optical and SAR, from over 20 Third Party Missions (TPM) and the Copernicus Sentinels. The optical sensors cover all ranges of data resolutions, depending on the needs of the disaster response, from the very high resolution Pléiades, WorldView and PlanetScope, to the high resolution Landsat missions. SAR sensors can also be managed in EOReader from a range of missions such as COSMO-SkyMed, RADARSAT-2, ICEYE and TerraSAR-X.

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Registration is open

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ACIX-III and CMX-II Workshop
Registration for the exercises is open

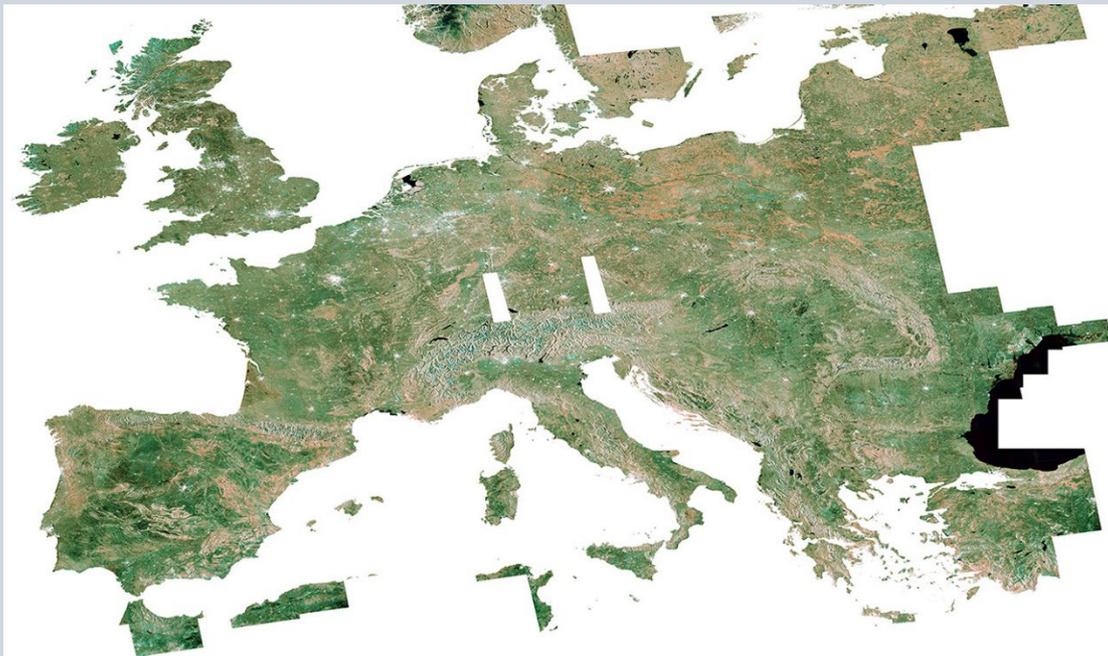READ MORE

Focus on: Tools

What tools do ESA offer?

Availability of a wide range of satellite mission data are offered through Earth Online, but did you know that there are many tools available for exploiting this data?

These tools can support a variety of applications, such as visualising, analysing, and processing data.

Some tools are dedicated for use with particular missions, while others are multi-mission toolboxes supporting multiple data formats. They are either available to download and install on your device, or available through a web client.

If you have downloaded data and are looking for ways to exploit it, find out what tools we offer.

BROWSE OUR TOOLS

Mosaic of Europe, data processed with the SNAP toolbox

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