



ESA Earth Observation missions at the service of geoscience

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The intervention will present ESA's Earth Observation programmes and their relevance to geoscience. ESA's Earth observation missions are mainly grouped into three categories: The Sentinel satellites in the context of the European Copernicus Programme, the scientific Earth Explorers and the meteorological missions. Developments, applications and scientific results for the different mission types will be addressed, along with overall trends and boundary conditions.

The Earth Explorers, who form the science and research element of ESA's Living Planet Programme, focus on the atmosphere, biosphere, hydrosphere, cryosphere and Earth's interior. The Earth Explorers also aim at learning more about the interactions between these components and the impact that human activity is having on natural Earth processes.

The Sentinel missions provide accurate, timely, long term and uninterrupted data to provide key information services, improving the way the environment is managed, and helping to mitigate the effects of climate change. The operational Sentinel satellites can also be exploited for scientific endeavours.

Meteorological satellites help to predict the weather and feature the most mature application of Earth observation. Over the last four decades satellites have been radically improving the accuracy of weather forecasts by providing unique and indispensable input data to numerical computation models. In addition, Essential Climate Variables (ECV) are constantly monitored within ESA's Climate Change Initiative in order to create a long-term record of key geophysical parameters.

All of these activities can only be carried out in international cooperation. Accordingly, ESA maintains long-standing partnerships with other space agencies and relevant institutions worldwide. In running its Earth observation programmes, ESA responds to societal needs and challenges as well as to requirements resulting from political priorities, such as the United Nations' Sustainable Development Goals.