



Flagship event for remote sensing – IGARSS 2012 opens

23 July 2012

The most important conference in the world on geoscience and remote sensing has begun – some 2400 experts from more than 70 countries will be guests at the International Congress Center in Munich until 27 July 2012. The focus of the International Geoscience and Remote Sensing Symposium (IGARSS) will be on new applications, integrated Earth observation systems, satellite image processing methods, as well as ongoing and future satellite missions. The conference looks to the future in areas at the boundaries of its specialisations and has become an annual highlight in the events calendar. IGARSS 2012 has been jointly organised by the German Aerospace Center (Deutsches Zentrum für Luft- und Raumfahrt; DLR), the European Space Agency (ESA) and the Geoscience and Remote Sensing Society (GRSS), part of the Institute of Electrical and Electronics Engineers (IEEE).

Perspectives on remote sensing

DLR Executive Board Chairman, Johann-Dietrich Wörner, made the importance of remote sensing clear in the opening speech Monday morning. “Using satellite-based remote sensing, we can not only identify global challenges, but investigate them as well. For this reason, space is an important contributor to the task of addressing global problems, whether this concerns the climate, environmental protection, the conservation of natural resources or disaster relief in the event of catastrophes.” The European approach was presented by Volker Liebig, ESA Director of Earth Observation, in his opening speech. Another guest speaker is Ghassem Asrar, Director of the World Climate Research Programme (WCRP), who is giving an overview of current efforts in climate research, and is talking about the future possibilities of Earth observation. With regard to the multi-day conference, Alberto Moreira, General Co-chair of IGARSS 2012 and Director of the DLR Microwaves and Radar Institute, states: “The scientific community that comes together at IGARSS conferences plays a critical role in the development of new fields of application and satellite missions. It is a great honour to have been entrusted with the coordination of this symposium.”

Global terrain model – TanDEM-X

DLR is making various specialist contributions at the symposium, covering a broad spectrum of research activities. One highlight is the TanDEM-X radar satellite mission, which is being used to create a new three-dimensional representation of the Earth in a quality and resolution not previously possible. This is done using a globally unique imaging technique in which two nearly identical satellites orbit the Earth in close formation, scanning it with their radar systems. TanDEM-X came into being under a private public partnership between DLR and Astrium GmbH. The global terrain model of Earth’s surface is expected to be available for scientific and commercial applications in mid-2014.

A new era in geographic information systems

Today, the use of Earth observation data is a vital element of the modern information society. Accessing up-to-date weather services is part of everyday life, as is checking the traffic situation using satellite images or looking at the roof of your own house in an online map. Who could have imagined such rapid and far-reaching developments at IGARSS in Munich 30 years ago? Back then, the conference took place for the second time; at its conclusion, the attendees made a promise to make of remote sensing a new research area. At IGARSS 2012, this specialist field is now taking another significant leap. Remote sensing is not only established in research and society – it also offers the capacity for even more diverse applications. It is transitioning into a new era of geo-information systems.

In this rapidly changing world, geo-information needs to be quickly, accurately, comprehensively and permanently accessible. IGARSS 2012 is highlighting the special role that remote sensing plays today, under the slogan 'Remote Sensing for a Dynamic Earth'. In invited sessions with specialised and general presentations, scientists, engineers and decision makers can learn more about issues such as how dynamic processes and changes to the Earth's surface can be captured better and more reliably using new methods and technologies in remote sensing.

Record number of expert presentations

What are the latest offerings from remote sensing, and what can we expect in the future? Those attending GARSS 2012 have the opportunity of getting a detailed overview up until 27 July. This year's programme offers a record number of conference sessions. More than 2000 presentations, 1200 scientific posters with special discussion groups and various social events guarantee extensive scientific exchange.

Furthermore, a total of 28 exhibitors will be present – along with DLR and ESA, partner space agencies NASA, JAXA and CSA, as well as companies such as Astrium, Kayser-Threde, RapidEye and Japan Space Systems. Not least, future scientific talent will also be promoted at this year's conference. In tandem with ESA, the DLR_School_Lab will be giving live demonstrations of how to run school laboratories, with hands-on experiments.

Live from the conference: presentations and webcasts

A selection of six presentations at a time will be broadcast during the entire conference via live stream on the Internet. DLR also has a dedicated blog set up for IGARSS, which will report from the conference with webcasts.

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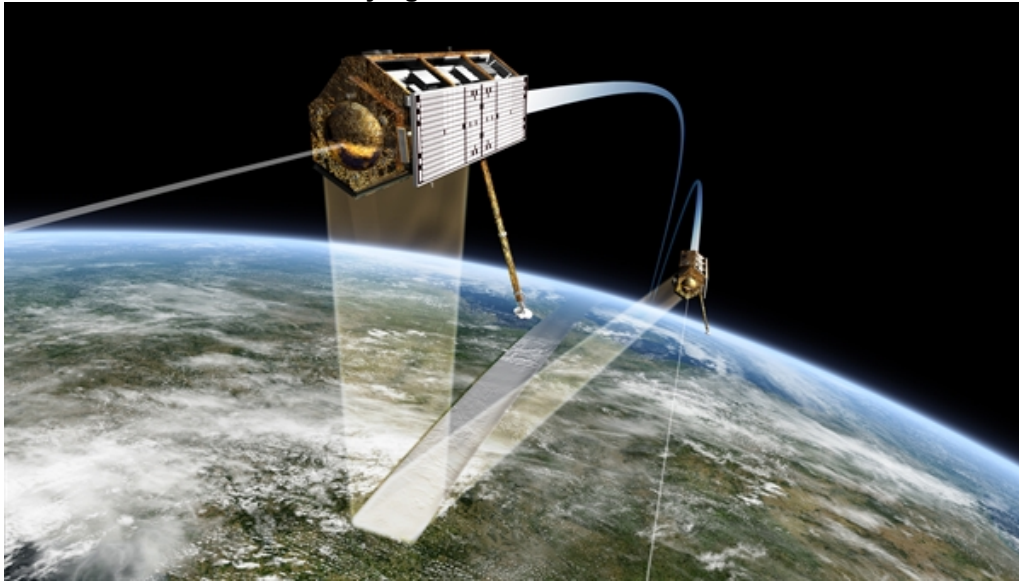
IGARSS 2012 logo



The logo of the 'International Geoscience and Remote Sensing Symposium', IGARSS 2012 shows, among other things, a symbolic representation of the German radar satellite TerraSAR-X.

Credit: IGARSS.

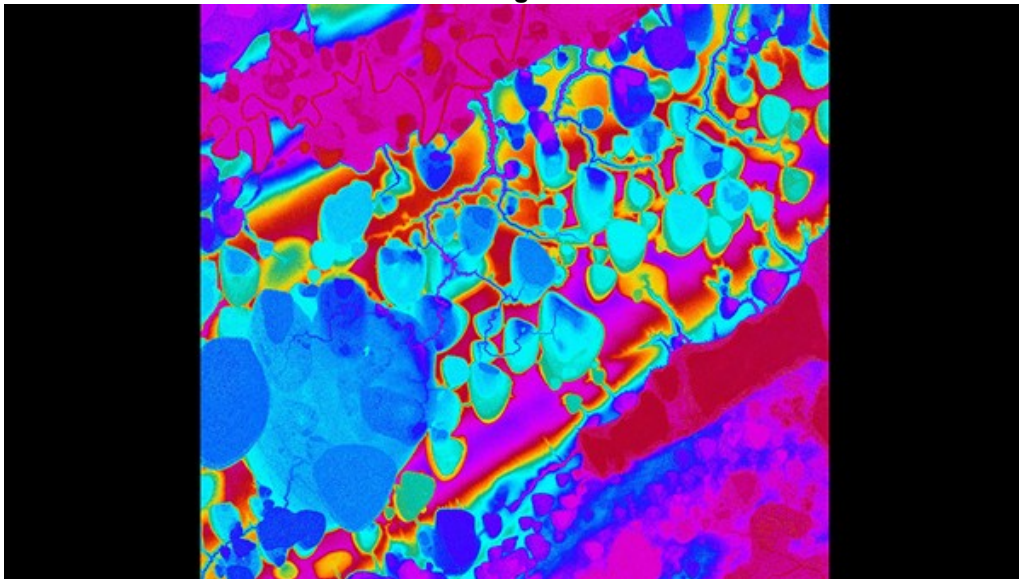
TanDEM-X and TerraSAR-X flying in formation



Flying in formation, TanDEM-X and TerraSAR-X will generate a precise global elevation model.

Credit: DLR.

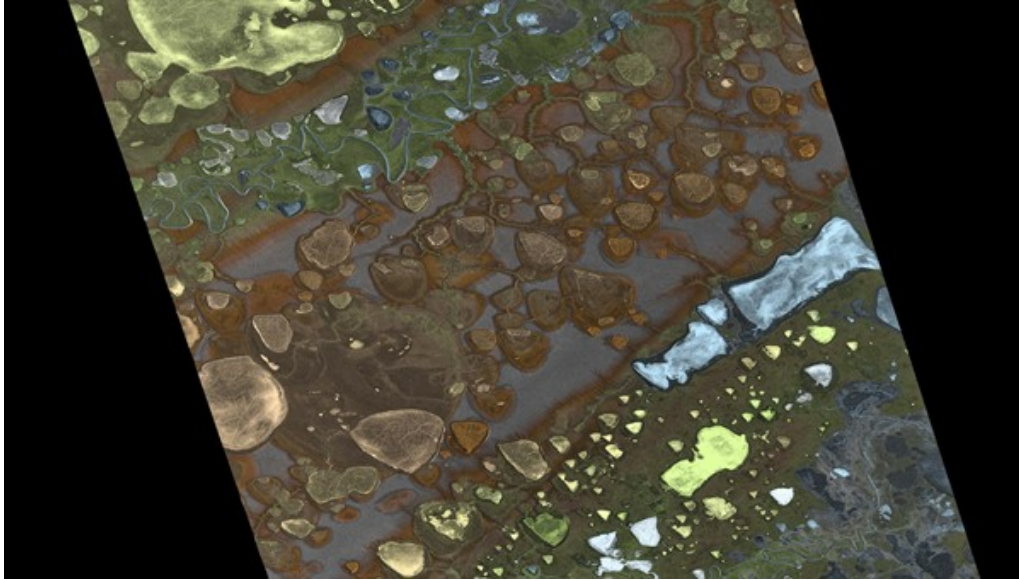
Ice sheets in Northern Siberia – interferogram



An interferogram is the combination of two radar images of the same area, with the transit time differences of the radar signals measured with high accuracy. In the image, these differences are illustrated in colour.

Credit: DLR (CC-BY 3.0).

Ice sheets in Northern Siberia



During the Shuttle Radar Topography Mission (SRTM) in 2000, the creation of elevation models was only possible below 60 degrees of latitude. The twin satellites TerraSAR-X and TanDEM-X flying in formation are creating elevation maps of areas such as Northern Siberia for the first time. In addition, the resolution of these maps is higher than ever before.

Credit: DLR (CC-BY 3.0).

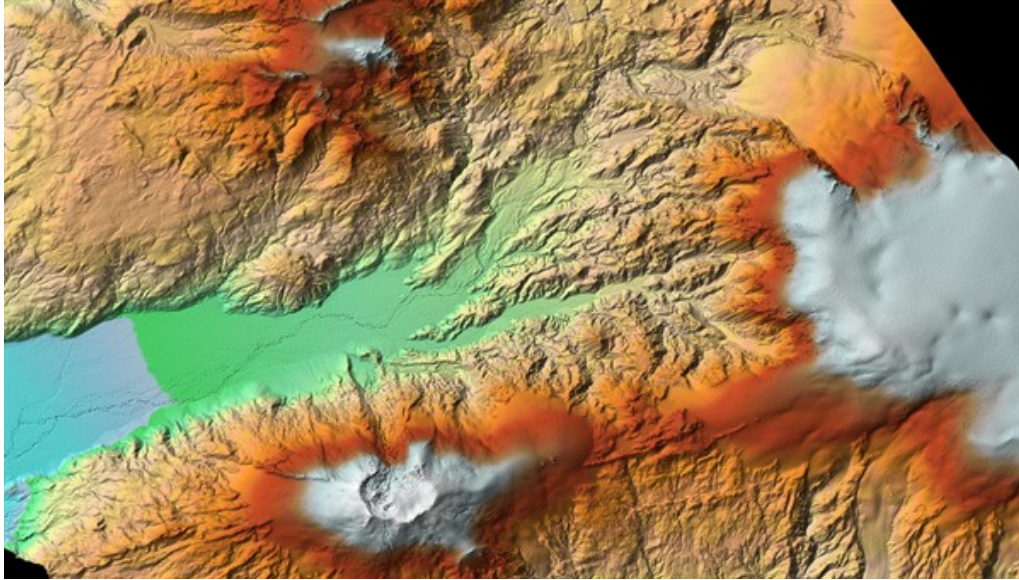
Elevation model of the Alps



This elevation model was derived from the differences between two radar images acquired by the ESA satellites ERS-1 (European Remote Sensing-1) and ERS-2.

Credit: DLR/ESA.

Eyjafjallajökull volcano in Iceland



The eruption of Eyjafjallajökull volcano in spring 2010 freed the crater, to the left in the image, of its ice cover. This three-dimensional elevation model, created using data from the two radar satellites TanDEM-X and TerraSAR-X, shows that the nearby volcano Katla (right) is probably still active; the small indentations indicate that the ice sheet covering it is melting and collapsing.

Credit: DLR (CC-BY 3.0).

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