UNITED NATIONS
Office for Outer Space Affairs
UN-SPIDER
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DECEMBER 2017/ JANUARY 2018 UPDATES

UN-SPIDER at a glance

Fifty-fifth session of the Scientific and Technical Subcommittee opens in Vienna

The Scientific and Technical Subcommittee (STSC) of the Committee on the Peaceful Uses of Outer Space (COPUOS) convened on 29 January in Vienna for its fifty-fifth session. STSC is one of the two subcommittees of COPUOS and will meet until 9 February.

Read more on the UN-SPIDER Knowledge Portal.

Tracking rising waters in the Rhine river

A combination of heavy rainfall, stormy weather and warmer temperatures than usual led to rising levels in the Rhine River in January 2018. The UN-SPIDER team has utilized radar imagery to map the high levels in the Rhine river near Cologne and Dusseldorf between 6 and 8 January 2018.

Read more on the UN-SPIDER Knowledge Portal.

Applications for programme to study microgravity science by performing experiments in a drop tower close 28 February

The United Nations Office for Outer Space Affairs (UNOOSA), in collaboration with the Center of Applied Space Technology and Microgravity (ZARM) and the German Aerospace Center (DLR), offers a selected research team the opportunity to conduct its own microgravity experiments at the Bremen Drop Tower. Under the Fellowship Programme “Drop Tower Experiment Series”, four drops or catapult launches during which approximately 5 or 10 seconds of microgravity, respectively, are produced. The deadline for applications submission is 28 February 2018.

Read more on the UN-SPIDER Knowledge Portal.

Applications open for programme offering opportunity to deploy cube satellites from ISS

The application period for the third round of the United Nations/Japan Cooperation Programme on CubeSat Deployment from the International Space Station (ISS) Japanese Experiment Module (Kibo), "KiboCUBE", is now open and will close on 31 March. KiboCUBE aims to provide educational or research institutions from developing countries that are United Nations Member States opportunities to deploy, from the ISS Kibo, cube satellites (CubeSats) which they develop and manufacture.

Read more on the UN-SPIDER Knowledge Portal.

UN-SPIDER jointly organizes regional workshop and training course on drought preparedness

UN-SPIDER has jointly organized a regional workshop and training course on building drought resilience together with the Geo Informatics and Space Technology Development Agency (GISTDA), the ASEAN Research and Training Center for Space Technology and Applications (ARTSA), the International Water Management Institute (IWMI) and the CGIAR Research Program on Water, Land and Ecosystems (WLE). The events were held at the Research and Training Center for Space Technology and Applications of the Association of Southeast Asian Nations, in Sri Racha, Thailand, from 4 to 8 December.

Read more on the UN-SPIDER Knowledge Portal.

Data application of the month

In this section, the UN-SPIDER team presents every month a specific example of a satellite data application for disaster risk reduction or emergency response.
Access the full list here.

Water quality monitoring

Water has specific reflectance characteristics based on the scattering and absorbing properties of their optically active constituents. These are directly or indirectly related to relevant water quality parameters. With the knowledge of their optical characteristics, it is possible to retrieve quantitative values of the concentrations for these water constituents, solely based on the reflectance of light measured by satellite sensors.

Read more on the UN-SPIDER Knowledge Portal.

News from the community

New UNESCO tool uses remote sensing data to monitor global water quality

Water quality is essential when it comes to health, food production, ecosystem functions, poverty reduction, gender equality and socio-economic development. Poor water quality leads to environmental, social and economic problems. The condition of the water, including its chemical, physical and biological characteristics, defines water quality, which could be affected by substances such as pesticides or fertilizers. Through UNESCO's new World Water Quality Portal, satellite-derived water quality information for all inland and coastal water is now freely available and can be browsed and visualized online.

Read more on the UN-SPIDER Knowledge Portal.

Scientists aim to improve weather warnings using satellite-based infrared luminance data

A group of scientists from the Riken Advanced Institute for Computational Science has undertaken a new project that aims to improve weather forecasting. The project makes use of data from the Japanese Himawari-8 satellite and combines it with a supercomputer programme at the Riken science institute. The project aims to significantly improve weather predictions, particularly in the case of extreme weather, in order to improve official warnings and to ultimately help save lives.

Read more on the UN-SPIDER Knowledge Portal.

Copernicus Emergency Management Service activated for floods in northern France and storm in Germany

The Copernicus Emergency Management Service was activated on 23 January due to Floods in northern France. Paris and the northeastern part of France were affected as a result of prolonged heavy rains causing a rise of the rivers Seine, Rhine and Ill. Authorities from Meteo France emitted an orange alert for floods.

Read more on the UN-SPIDER Knowledge Portal.

International Charter activated for volcano activity in Philippines and Papua New Guinea

The International Charter Space and Major Disasters has been activated for volcanoes in the Philippines and Papua New Guinea.

Read more on the UN-SPIDER Knowledge Portal.

Researchers test new model for predicting disease outbreak based on space data

In May 2017, a team of scientists from West Virginia University used satellites to monitor temperatures, water storage, precipitation and land in order to predict a cholera outbreak in Yemen. After processing the satellite data in algorithms, the team was able to come up with a prediction model and ultimately to identify the particular areas that were most at risk for an outbreak several weeks before the

event took place. The result of the successful test in Yemen highlights how public health technologies could benefit from the use of satellite data for disease forecasting.

Read more on the UN-SPIDER Knowledge Portal.

North Carolina flood inundation maps highlight role of 3D elevation data in disaster management

When natural hazards, such as hurricanes and rainstorms, approach a specific area, high-resolution elevation mapping data can help assess and mitigate likely damage. In order to support geospatial data collection, the United States Geological Survey (USGS) launched the 3D Elevation Program (3DEP) to systematically collect enhanced elevation data in the form of high-quality light detection and ranging (LiDAR) data for the United States of America.

Read more on the UN-SPIDER Knowledge Portal.

Japan plans to provide disaster information through car navigation via satellite

The government of Japan plans to provide drivers with disaster information straight to their cars by making use of Japan's Quasi-Zenith Satellite System (QZSS). The proposed software aims to improve the country's disaster preparedness, for instances in the case of events similar to the 2011 Great East Japan Earthquake and Tsunami. The proposed system utilizes Michibiki satellites and has an advantage over other communication infrastructure due to its higher chance of surviving damages during disasters. The government tested the software in November 2017 in the Wakayama and Kochi prefectures and it is expected to be officially introduced first in Tokyo during the 2018 fiscal year.

Read more on the UN-SPIDER Knowledge Portal.

Global Humanitarian Technology Conference proceedings consider the role of satellite data for humanitarian action

Launched in 2010, the Global Humanitarian Technology Conference (GHTC) is the flagship conference of the Institute of Electrical and Electronics Engineers (IEEE), which focuses on innovation, deployment, and adaptation of Technology for Humanitarian Goals and Sustainable Development. The proceedings of the 7th edition of the conference, which took place in October 2017 in San Jose, United States of America, have recently been published and contain various contributions made by researchers and participants at the conference including on the topics of satellite data and communications and disaster resilience.

Read more on the UN-SPIDER Knowledge Portal.

A new information system for disaster management in the Andean region supports risk analysis

The RIESGOS project (Spanish for risks) was initiated by the German Aerospace Center (Deutsches Zentrum für Luft- und Raumfahrt; DLR) and other project partners to develop a multi-risk information system. The purpose of this project is to improve the information base for natural disaster management and develop strategies to avoid or mitigate risks. This will improve the understanding of risks and predict interdependencies during major emergencies. A prototype of the system is being developed for the Andean region in Chile, Ecuador and Peru.

Read more on the UN-SPIDER Knowledge Portal.

United Arab Emirates becomes official member of the International Charter “Space and Major Disasters”

The United Arab Emirates (UAE) has become a member of the International Charter “Space and Major Disasters“. The country will be represented in the context of the International Charter by the United Arab Emirates Space Agency, the National Emergency and Crisis and Disasters Management Authority (NCEMA) and the Mohammed bin Rashid Space Centre (MBRSC).

Read more on the UN-SPIDER Knowledge Portal.

Agreement on new international Space Climate Observatory

On 12 December, two years after the adoption of the landmark Paris Agreement, participants gathered in France to discuss new actions on climate change at the One Planet Summit. On the occasion of this gathering, leaders of space agencies around the world have proposed setting up a Space Climate Observatory (SCO) that will boost collaborative work by improving long-term sustainability and accessibility of climate data from space satellites and making it available to scientists around the world.

Read more on the UN-SPIDER Knowledge Portal.

Flood Early Warning and Early Action System (FEWEAS) mobile app helps predict flooding

A new mobile phone application provides early warning and early action information related to the Citarum River Basin in Indonesia. FEWEAS Citarum can be downloaded for free on Android and iOS phones and is expected to help authorities with mitigation and disaster risk reduction around the area of the Citarum River Basin in Indonesia. The app is an initiative of the Bandung Institute of Technology (ITB) research team in collaboration with the International Federation of Red Cross and Red Crescent Societies (IFRC), the Indonesian Red Cross (PMI) and Zurich Insurance Indonesia (ZII).

Read more on the UN-SPIDER Knowledge Portal.

New online remote sensing application for land cover classification and monitoring with Landsat data

REMAP app is an open-access online application for land cover classification and monitoring. The application aims to extend the ability of volunteers, decision-makers and scientists to assess the extent of land cover changes and implement actions to help the conservation of natural environments around the world under the International Union for Conservation of Nature (IUCN) Red List of Ecosystems.

Read more on the UN-SPIDER Knowledge Portal.

Sentinel-5P delivers its first images of air pollution

Sentinel-5P is the latest satellite mission of the European Earth observation programme Copernicus. The satellite was launched on 13 October 2017 to monitor the atmosphere and map gases and particles that pollute the air. Less than two months after its launch, the Sentinel-5P has already delivered its first images of air pollution.

Read more on the UN-SPIDER Knowledge Portal.

ESA investigates the potential of High Altitude Pseudo Satellites (HAPS)

The European Space Agency is currently conducting a more in-depth examination of the concept of High Altitude Pseudo Satellites (HAPS) and their potential for emergency response. HAPS are aircraft that are flying or floating at around 20 km altitude for very long duration flights up to several months or even years. Flying at a similar altitude as conventional aircraft but operating more like satellites, they are able to offer continuous coverage of the territory below and are considered as the missing link between drones and satellites.

Read more on the UN-SPIDER Knowledge Portal.