



UNITED NATIONS  
Office for Outer Space Affairs

## INFORMATION NOTE

### **United Nations/Germany Workshop on the International Space Weather Initiative: *Preparing for the Solar Maximum***

**Organized by  
the United Nations Office for Outer Space Affairs (UNOOSA)**

**Supported by  
the German Aerospace Centre (DLR)**

**Sponsored by  
the International Committee on Global Navigation Satellite Systems (ICG)**

**Neustrelitz, Germany**

**10 – 14 June 2024**

#### **1. Introduction**

Space weather is an inherently international matter. Solar and magnetic storms affect large regions of the Earth simultaneously and equatorial ionospheric disturbances occur routinely around the world. It is therefore appropriate for the United Nations to promote improvements in space weather modelling and forecasting for the benefit of all nations.

The International Space Weather Initiative (ISWI) was launched in 2009 and has developed research capacities in the scientific disciplines of Sun-Earth relations and space weather in many countries around the world. ISWI has established a platform that takes a bottom-up approach in order to produce space weather-literate communities, in particular in developing countries, enabling those communities to work together as a network to share ideas, information and data and to develop joint projects.

ISWI has enabled scientists to use global navigation satellite system data in studies on space weather. These data have brought together scientists from various disciplines (such as seismology, the ionosphere and the atmosphere) to work in the field of space weather and have made it possible to apply the fundamental physics of Sun-Earth relations to everyday life, which is of great importance to policymakers.

All achievements of international cooperation and coordination for ISWI, including instrumentation, data analysis, modelling, education, training, and public outreach, are made available through the ISWI Newsletter and the ISWI Website (<http://www.iswi-secretariat.org/>).

**The United Nations/Germany Workshop on the International Space Weather Initiative: *Preparing for the Solar Maximum*** will be held in Neustrelitz, from 10 to 14 June 2024. This workshop is being organized by the United Nations Office for Outer Space Affairs (UNOOSA). The workshop is supported

by the German Aerospace Centre (DLR) and the International Committee on Global Navigation Satellite Systems (ICG).

## **2. Objectives and Expected Outcomes**

The main objectives of this workshop are to continue efforts in the deployment of instruments in developing countries and interpretation of space weather data; to focus on new research results and findings; and at the same time aim at strengthening international coordination and cooperation on space weather products and services.

The workshop will provide ample time for discussion open to all participants, and networking opportunities, as well as to address in-depth questions and answers on specific topics unique to a particular region.

The expected outcomes of the workshop will be recommendations for improved collection, exchange, and delivery of space weather data, as well as improved operational analysis, modelling and forecasting methods through the promotion of best practices, suggestions of means to improve accuracy, reliability, and interoperability.

The discussions at the workshop will also be linked to the 2030 Agenda for Sustainable Development and to its targets set out for Sustainable Development Goals (SDG). The workshop will contribute to:

- *SDG 4: Quality Education.* Continuation of the efforts in space weather education to better define and characterize severe space weather events and their probability of occurrence and assess their impacts on technological systems.
- *SDG 9: Industry, Innovation, and Infrastructure* in protecting infrastructure from space weather. Effects on the ground can include damage and disruption to power distribution networks, increased pipeline corrosion, and degradation of radio communications.
- *SDG 17: Partnerships for the Goals.* International coordination of operational space weather services, including monitoring, forecasting.

## **3. Preliminary Programme of the Workshop**

The programme of the workshop will include a series of technical presentations addressing the following topics:

- Solar eruptions – their sources at the Sun and impact on geospace (magnetosphere, ionosphere, atmosphere, ground);
- Flares and their impact on ionosphere/atmosphere, flare-coronal mass ejections (CME) relationship;
- Coronal holes and high speed streams that lead to stream interaction regions;
- Geomagnetic storms and radiation belt variability due to CMEs and stream interaction regions (SIRs);
- Solar energetic particles and the associated phenomena such as coronal/interplanetary radio bursts;
- Spacecraft anomaly, impact on global navigation satellite systems (GNSS), ionospheric irregularities;
- Space weather prediction using various techniques including machine learning;
- Space weather extreme events;
- Space weather instrumentation (ISWI instruments and other instruments);
- Tools and methods for space weather education and outreach.

### **3.1. Poster session**

A poster session will also be organized to allow speakers and participants to present their ideas and to share them with the other participants. The posters will be grouped by subject and authors will be at the posters for one of the two afternoon poster sessions according to the schedule in the programme.

#### 4. Working Methods

Participants of the workshop are requested to deliver a presentation paper in a field related to the topics of the workshop. It is also necessary to submit an abstract of presentation with a maximum of 600 words including the following details: *Paper Title, Author (s) Name(s), Affiliation(s), and e-mail address* for the presenting author. **Applicants are requested to use the template to present an abstract in the required format.**

Presentations made at the workshop will be published on the website of the Office for Outer Space Affairs ([www.unoosa.org](http://www.unoosa.org)) approximately two weeks after the workshop.

Proceedings of the United Nations/Germany Workshop on the International Space Weather Initiative: *Preparing for the Solar Maximum* will be published by Springer soon after the workshop. The Proceedings book will highlight the current status of global space weather research, especially in developing countries. All participants are required to prepare and submit their manuscripts using the template provided before the start of the workshop. The manuscript length is 6 pages for invited papers and 4 pages for contributed papers and poster papers. All manuscripts will be peer-reviewed and submitted to the publisher by September 30, 2024. The proceedings book will be edited by the workshop conveners.

#### 5. Expected Participants

Applicants should be involved in space weather research activities in national or international organizations, research centres, academic institutions or industry. **Applications from equally qualified female applicants are particularly encouraged.**

The workshop scientific organizing committee, consisting of an international group of space weather scientists, will select participants on a competitive basis. Successful applicants will be notified of the outcome within three weeks after the deadline. Successful applicants are required to prepare their manuscripts before the start of the workshop.

#### 6. Language of the Workshop

Applicants must have a working knowledge of English, which will be the only language of the workshop.

#### 7. Financial Support

Within the limited financial resources available, a limited number of selected participants will be offered financial support to attend the workshop. This financial support will defray the cost of travel (a round trip air-ticket – most economic fare – between the closest international airport to their residence and Neustrelitz, Germany) and/or the room and board expenses for the duration of the workshop.

#### 8. Deadline for Submission of Applications, Abstracts, and Manuscripts

The completed application form together with the presentation abstract should be submitted on-line **no later than Friday, 15 March 2024**. Only complete applications with all the requested information and signatures will be considered by the workshop organizing committee. **Once selected, the applicants can submit their manuscripts on or before 4 June 2024.**

Please note that the on-line application form is available on the web site of the Office for Outer Space Affairs at: <https://forms.office.com/e/NJCqzpzDiZ>

#### 9. Life and Health Insurance

Life and major health insurance are the responsibility of each selected participant or participant's nominating institution or government. The co-sponsors will neither assume any responsibility for life and major health insurance, nor for any other expenses related to medical treatment or accidental events.

#### **10. Sponsorship of the Workshop**

The United Nations Office for Outer Space Affairs is responsible for organizing the workshop. ICG is a co-sponsor of the workshop. **Sponsorship of the workshop is still open to interested entities.**

#### **11. Further Information and Contact Details**

For additional information about the workshop, please contact Mr. Patrick Gindler, United Nations Office for Outer Space Affairs, at the following e-mail address: ([patrick.gindler@un.org](mailto:patrick.gindler@un.org)).

For the latest information on the workshop, please frequently check the website: <https://www.unoosa.org/oosa/en/ourwork/psa/schedule/2024/2024-iswi-workshop.html>