

DLR Space Weather Activities

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Institute for Solar-Terrestrial Physics
Space Weather Observations

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A satellite photograph of the Earth from space, showing the curvature of the planet, the blue atmosphere, and the green and brown landmasses of Europe and Africa. The image is partially cut off on the right side.

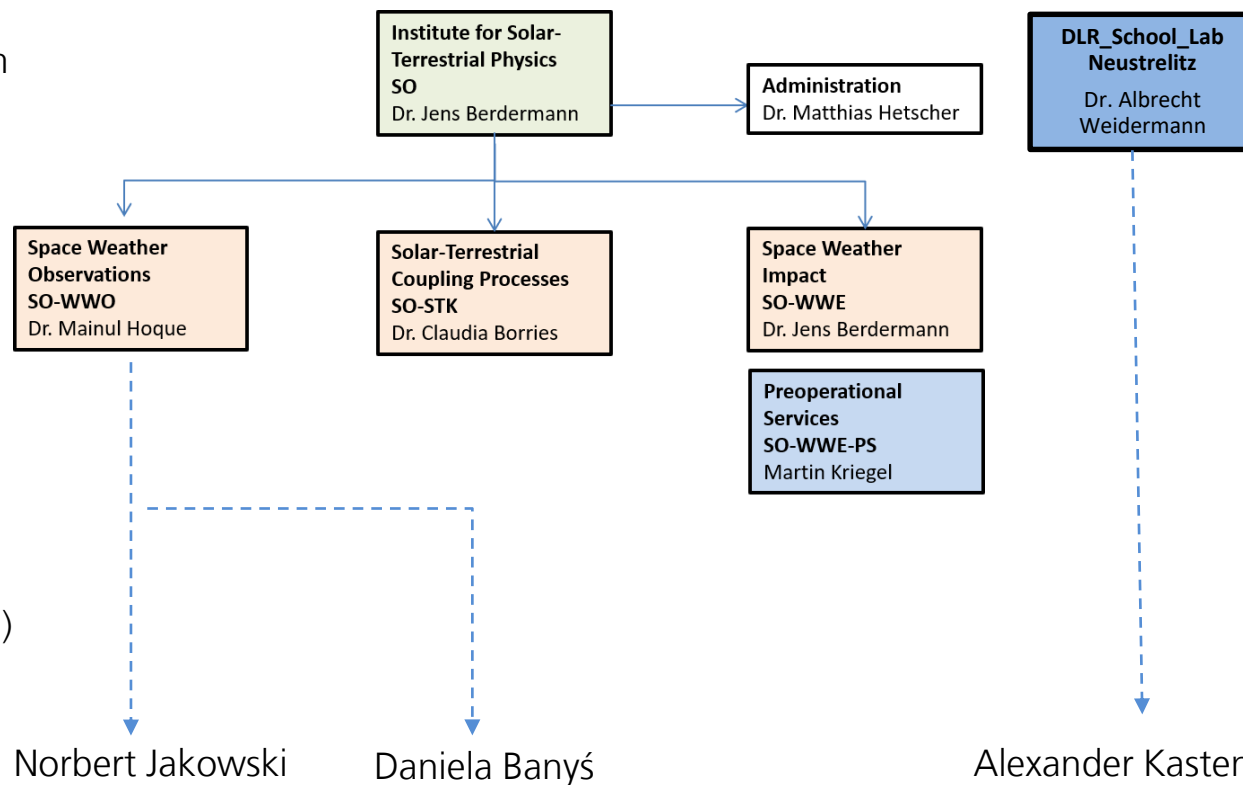
Knowledge for Tomorrow

Institute for Solar-Terrestrial Physics (DLR-SO)

- Newly founded institute of DLR, opening ceremony on May 26, 2021
- Transfer of the working group „Ionospheric effects and corrections“ from DLR’s Institute of Communications and Navigation
- Currently about 35 employees in 3 departments

Basic and applied research on space weather to protect national infrastructures and support affected industries through timely, accurate and reliable observations and forecasts

- Understanding of physical processes in the magnetosphere-thermosphere-ionosphere-atmosphere system mainly driven by the sun.
- Transfer of results from basic research to applications via user-relevant pre-operational products developed in the institute
- Promote resilience of critical technological infrastructures in the modern society, e.g. via the Ionospheric Monitoring and Prediction Center (IMPC)



DLR Neustrelitz

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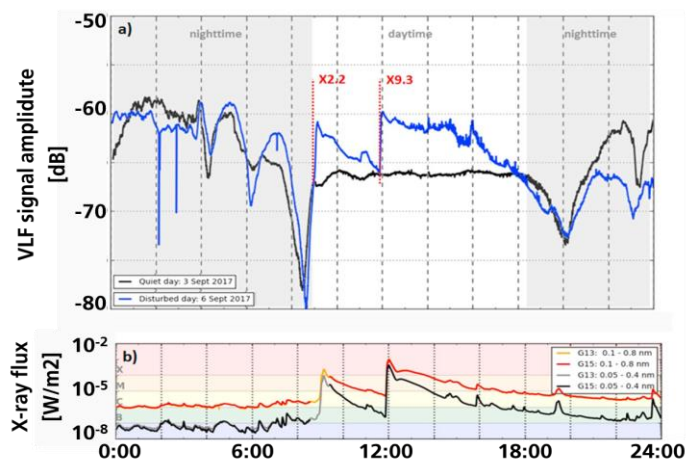
Alexander Kasten



ISWI instruments provided or hosted by DLR

GIFDS – Global Ionospheric Flare Detection System

- Compact VLF receiver for 10 Hz amplitude and phase measurements between 10 – 100 kHz
- Now cast detection of SIDs caused by solar flares using a ground-based VLF system
- Integration of real-time VLF data and flare alerts into IMPC



CALLISTO – Compound Astronomical Low frequency Low cost Instrument for Spectroscopy and Transportable Observatory

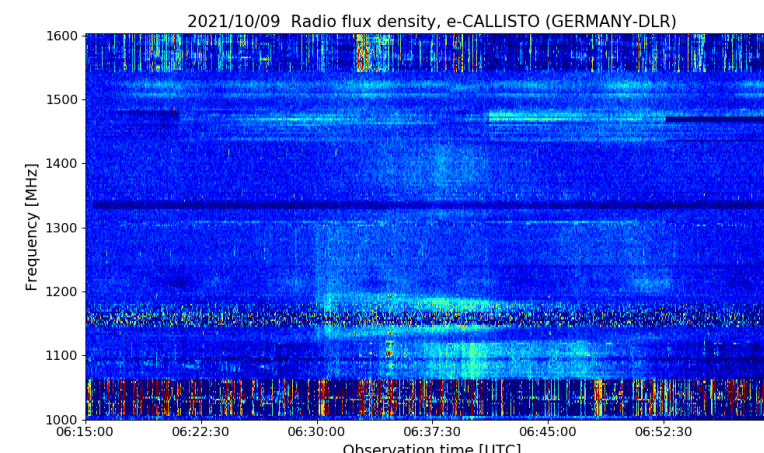
Close collaboration with Christian Monstein

- Monitoring radio frequency interferences and solar radio bursts
- One spectrometer (1 – 1.6 GHz) installed in early 2021
- Another spectrometer (10 – 75 MHz) shall be finished early 2022



SOFIE – Solar Flares detected by Ionospheric Effects

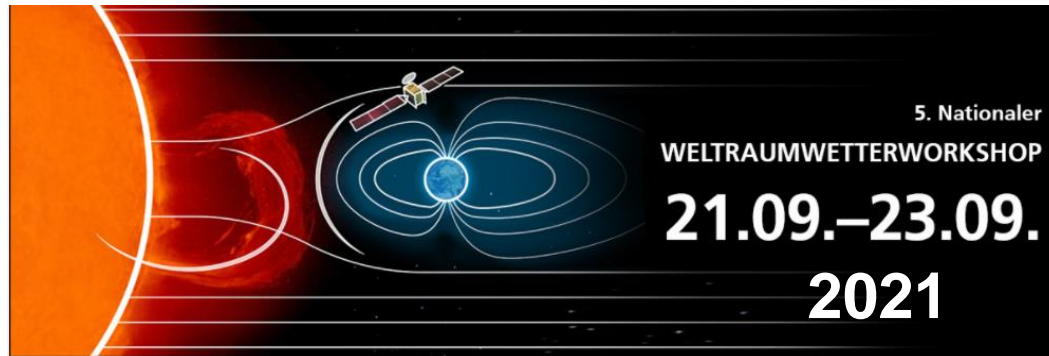
- Educational project to build a VLF receiver and measure single VLF radio signals in order to detect solar flare effects
- Professional insight in the topics: space weather, ionosphere and communication and navigation



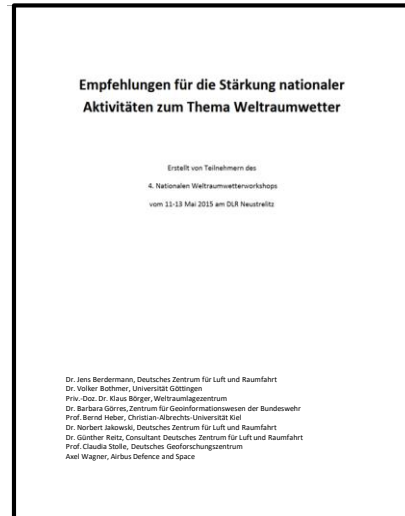
Public Outreach

5th National Space Weather Workshop in 2021

- Online workshop with about 130 participants
- Recommendations to strengthen German space weather research capabilities and coordination



4th National Space Weather Workshop at DLR Neustrelitz (2015)



International Space Weather Camp (formerly known as SW Summer Camp)

(First SW Summer camp in 2011, ISWI Newsletter - Vol.3 No.65, 07 July 2011)

- A partnership between the UAHuntsville (Alabama), SANSA, DLR, the University of Rostock and the Leibniz Institute of Atmospheric Physics (IAP)
- Online lectures together with UAH and SANSA
- Project work has been done remotely by students in the respective country
- German students could get a certificate

