

Monitoring and Predicting Space Weather in the Heliosphere: Operational Services

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Abstract

Space Weather describes the conditions in space that affect the Earth and its technological systems. This weather originates from the Sun. The Sun releases energy in different forms and on different time scales. She radiates energy and loses mass. The continuous stream of mass is the solar wind, with superimposed fast streams, or shocks. Space Weather gives the status of the radiation, the solar wind and proton streams on a certain moment, at a certain location on the Sun and in space.

A Regional Warning Centre tries to be one step ahead of the influences and threats from space weather. The RWC of Belgium monitors the Sun in real-time and near real-time and predicts space weather in the near future. The centre provides a probability for solar flares, predicts the behaviour of the solar wind and its connection with the Earth's magnetosphere, and the energy input of the Sun in the radio range of 10.7cm. A team of well-trained space weather forecasters perform this daily task, 7/7. The daily space weather bulletin is sent at 12:30 UT, fast alerts are sent in case of extreme space weather. Automated software keeps track of the flaring status and the occurrence of halo coronal mass ejections, night and day.

In this workshop, we guide you through the space weather data used to distillate a space weather bulletin. We teach you the tricks to understand how magnetic structures on the solar surface and atmosphere behave. We will discuss the fingerprints of shocks and trailing plasma clouds, and coronal holes in solar wind data.

Date: Friday 22 October 2010
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Room: Informatics Laboratory @ Adriatico Guest House

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not relevant information, but it shows that that combination *mother of several kids - working in Space Weather* is possible:
married, mother of 4 sons, born in 1971

My professional life in a few lines

I studied Physics at the Katholieke Universiteit Leuven (1989-1993). After this studies, I became a PhD student in 1993 in combination with teaching and tutoring physics to first year's engineering students. My PhD concerned helioseismology, more particular, the propagation of acoustic modes trapped in the upper layers of the Sun. It was great to find a link between theory - mathematics and the physics of the convection zone of the Sun.

After my PhD and mother leave of the third child, in 2002, I continued to study the Sun at the Royal Observatory of Belgium, more particular at the solar physics department called the SIDC, Solar Influences Data analysis Centre. Here, I learned that solar research is relevant to society. I was (and still am) strongly involved in the Regional Warning Centre (RWC). This RWC involves 'Space Weather monitoring and forecasting'. We focus on both the science and applications of Space Weather.

In the mean while, I became a member of the STCE end of 2007. I always had a strong personal interest in science communication. Within the STCE, I can bring my educational ideas of Space Weather into practice. With the help of the STCE-team, we try to involve and communicate with scientists, companies and the general public about Space Weather and it's applications.