

SEPServer

Data Services and Analysis Tools for Solar Energetic Particle Events and Related Electromagnetic Emissions

UNDERSTANDING EXTREME SPACE WEATHER

The Sun is both a source of all life and significant hazards. Solar energetic particle (SEP) events provoke extreme space weather, putting the functioning of satellites at risk. The SEPServer project will combine fragmented data to better understand such events.

Throughout the world, scientists strive to understand the sometimes extreme behaviour of our nearest star – the Sun. With 2012 and the high of the solar cycle approaching, the number of solar energetic particle (SEP) events is set to increase, provoking more extreme weather conditions. Whilst not noticeable by humans on Earth, space weather is a hazard for satellites, for the astronauts on-board the International Space Station (ISS), and in extreme cases for the aircrew on polar flights. Therefore, scientists observe SEP events. However, short of a coordinated approach and fully open access to SEP data, the value of this immense work is less than optimal.

SEPServer addresses this shortfall; the project aims at adding value to several existing space missions and

Earth based observations by facilitating such coordination by promoting open access to data. In doing so, it will produce a new tool that will greatly facilitate the investigation of SEPs and their origin. This tool is set to take the form as a server that provides SEP data, related electromagnetic (EM) observations and analysis methods, a comprehensive catalogue of observed SEP events, as well as educational outreach material on solar eruptions.

Hence SEPServer integrates scattered data from a number of international sources, enhancing data accessibility, and thereby contributing to better quality evaluation, whilst fertilising the ground for new data analysis and modelling to be performed to better understand the Sun and the space weather that it creates.



RAMI VAINIO
IS PROJECT COORDINATOR

QUESTIONS & ANSWERS

What do you want to achieve with this project?

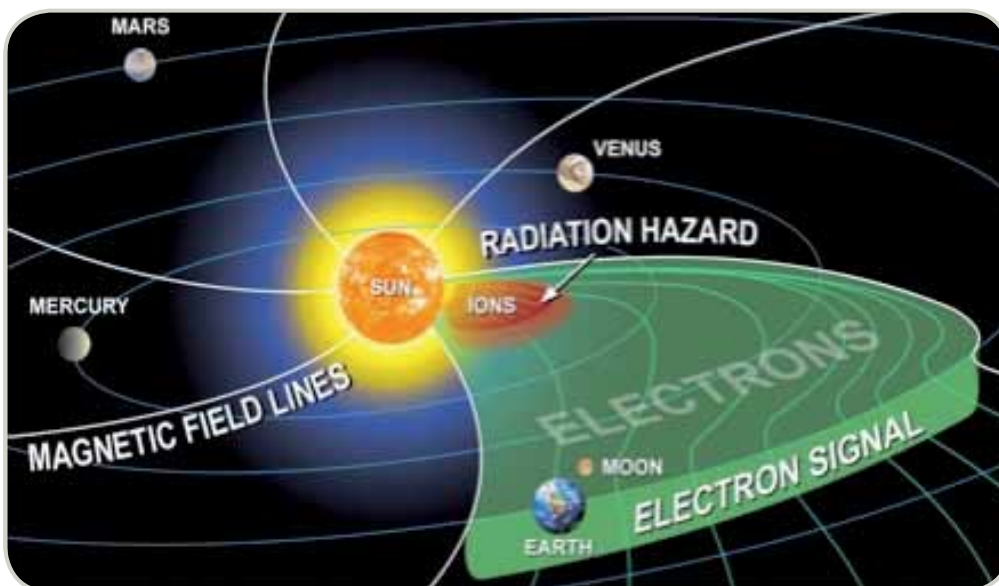
Space weather research and forecasting depend on easy access to data and state-of-the-art tools to analyse them. We want to provide these for solar energetic particle events, which are a major component of space weather.

Why is this project important for Europe?

With the rapidly growing European space fleet, hazards such as solar particle events are becoming increasingly important. We will provide means for the research community to better understand these events and to develop tools for forecasting their occurrence and characteristics.

How does your work benefit European citizens?

Increased security of space assets is in the best interest of all European citizens. In addition, the project will provide exciting new knowledge of the Sun's influence on Earth and space exploration. Our outreach activities will make this knowledge available to the public.



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SEPServer aims to establish an integrated web-based interface to solar energetic particle data and analysis tools.

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PROJECT INFORMATION

Data Services and Analysis Tools for Solar Energetic Particle Events and Related Electromagnetic Emissions (SEPServer)

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