

Implementation of a Space Weather VOEvent service at IRAP in the frame of Europlanet H2020 PSWS

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Abstract

Under Horizon 2020, the Europlanet Research Infrastructure includes PSWS (Planetary Space Weather Services), a set of new services that extend the concepts of space weather and space situation awareness to other planets of our solar system. One of these services is an Alert service associated in particular with an heliospheric propagator tool for solar wind predictions at planets, a meteor shower prediction tool, and a cometary tail crossing prediction tool. This Alert service, is based on VOEvent, an international standard proposed by the IVOA and widely used by the astronomy community. The VOEvent standard provides a means of describing transient celestial events in a machine-readable format. VOEvent is associated with VTP, the VOEvent Transfer Protocol that defines the system by which VOEvents may be disseminated to the community

This presentation will focus on the enhancements of the VOEvent standard necessary to take into account the needs of the Solar System community and Comet, a freely available and open source implementation of VTP used by PSWS for its Alert service. Comet is implemented by several partners of PSWS, including IRAP and Observatoire de Paris.

A use case will be presented for the heliospheric propagator tool based on extreme solar wind pressure pulses predicted at planets and probes from a 1D MHD model and real time observations of solar wind parameters.

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