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Integrated environment for simulation access and visualization : an extension of SPASE proposed by the TEMPETE project

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During the EU-FP7 project « Integrated Medium for Planetary Exploration » (IMPEx), an interface between planetary simulation databases and online data processing tools has been developped [Khodachenko et al, 2011]. One of the efforts of the IMPEx project was to specify a language describing the data that exchanged between the simulation databases and the visualization tools [Hess et al, 2013]. This led to extend the SPASE data model in order to describe most of the numerical codes used for simulations of the plasma environment in the Solar System. This extension is now fully incorporated in SPASE.
The TEMPETE project aims to understand the response of planetary magnetospheres and exospheres to solar storms. The project more specifically addresses how to describe and track the temporal evolution of the interaction of a solar storm with planetary environments (Earth, Mars, Mercury). We relied on the effort and the infrastructure developed in the IMPEx project and we extend it to a new class of simulation model and to give also the possibility to describe time varying simulation results. The first step is to extend the current SPASE data model in order to describe upper atmosphere/exosphere simulation runs and results. Secondly we intend to describe variable input conditions and associated results.
We present here the status of the data model extension and new visualization functionnalities.

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Abstract

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Authors: Dr MODOLO, Ronan (LATMOS / UVSQ); Dr GÉNOT, Vincent (IRAP); Dr LEBLANC, Francois (LATMOS / CNRS); Dr ANDRÉ, Nicolas (IRAP); M. TONIUTTI, Jean-Philippe (GFI); M. BEIGBEDER, Laurent (GFI); Dr POPESCU, Daniel (GFI); Mme BOUCHEMIT, Myriam (IRAP); Dr GARNIER, Philippe (IRAP); M. GAN-GLOFF, Michel (IRAP); Mlle BASKEVITCH, Claire (LATMOS / CNRS); Mlle WERNER, Elisabeth (LATMOS / CNRS); Dr CHAUFRAY, Jean-Yves (LATMOS / CNRS); Dr FONTAINE, Dominique (LPP); Prof. SAVOINI, Philippe (LPP)

Orateur: Dr MODOLO, Ronan (LATMOS / UVSQ)

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