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IMPEx SimDM, a metadata model to exchange simulation data in the field of space plasma and planetary physics

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Abstract

We describe in this paper a metadata model used to search, exchange and retrieve data coming from simulations in the field of space plasma and planetary physics.

1. Introduction

The EU-FP7 Project "Integrated Medium for Planetary Exploration" (IMPEx, (http://impex-fp7.oeaw.ac.at) is a result of scientific collaboration between institutions across Europe and is working on the integration of a set of interactive data analysis and modeling tools in the field of space plasma and planetary physics. These tools are comprised of AMDA, CLWeb and 3DView from the data analysis and visualization sector as well as Hybrid/MHD and Paraboloid Magnetospheric Models from simulation databases.

2. A common set of metadata

To enable the exchange of planetary simulation data between different sources and online data processing tools, it is necessary to use a common set of metadata.

3. IMPEx SimDM

In this presentation, we describe this set of metadata, called the IMPEx Simulation Data Model (IMPEx SimDM). IMPEx SimDM is an extension of the SPASE metadata model (http://www.spase-group.org/) widely used to describe observations and measurements in the solar and space plasma domains.

6. Summary and Conclusions

IMPEx SimDM is now successfully used to describe simulations provided by institutes that are part of IMPEx (LATMOS, FMI and SINP) and others outside the project (UCLA, CCMC), demonstrating that the IMPEx initial infrastructure can easily be extended in the future.