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On the main standards driving the Virtual Magnetospheric and Heliospheric Observatories and their benefits to users

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Finding and retrieving space physics data is often a complicated task even for publicly available data sets: Thousands of relatively small and many large data sets are stored in various formats and, in the better case, accompanied by at least some documentation. Virtual Heliospheric and Magnetospheric Observatories (VHO and VMO) are being developed to help researches by creating a single point of uniform discovery, access, and use of heliospheric (VHO) and magnetospheric (VMO) data.

The VMO and VHO functionality relies on metadata expressed using the SPASE data model. This data model is developed by the SPASE Working Group which is currently the only international group supporting global data management for Solar and Space Physics. The two Virtual Observatories (VxOs) have initiated and lead a development of a SPASE-related standard named SPASE Query Language for provided a standard way of submitting queries and receiving results.

Our presentation will demonstrate how the VMO and VHO use SPASE and SPASEQL for searches based on various criteria as, for example, spatial location, time of observation, measurement type, parameter values, etc. The results can then be saved, downloaded or displayed as, for example, spatial-temporal plots that quickly reveal where and how often was the searched-for phenomenon observed.

We will also demonstrate how a local application, written in the IDL programming language, can submit queries and retrieve results from the VxOs by employing SPASEQL.

References:
http://www.spase-group.org/
http://vmo.nasa.gov
http://vho.nasa.gov