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Space Physics Interactive Data Resource - SPIDR

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SPIDR (Space Physics Interactive Data Resource) is a de facto standard data source on solar-terrestrial physics, functioning within the framework of the ICSU World Data Centers. It is a distributed database and application server network, built to select, visualize and model historical space weather data distributed across the Internet. SPIDR can work as a fully-functional web-application (portal) or as a grid of web-services, providing functions for other applications to access its data holdings.

Currently SPIDR archives include geomagnetic variations and indices, solar activity and solar wind data, ionospheric, cosmic rays, radio-telescope ground observations, telemetry and images from NOAA, NASA, and DMSP satellites. SPIDR database clusters and portals are installed in the USA, Russia, China, Japan, Australia, South Africa, and India.

SPIDR portal combines functionality from the central XML metadata repository with two levels of metadata, descriptive and inventory, with a set of distributed data source web services, web map services, and raw observations data files collections. A user can search for data using metadata inventory, use persistent data basket to save the selection for the next session, and to plot and download in parallel the selected data in different formats, including XML and NetCDF. A database administrator can upload new files into the SPIDR databases using either the web services or the web portal. SPIDR databases are self-synchronising. User support on the portal includes discussion forum, i-mail, data basket for metadata bookmarks and selected data subsets, and usage tracking.

SPIDR technology can be used for environmental data sharing, visualization and mining, not only in space physics, but also in seismology, GPS measurements, tsunami warning systems, etc. All grid data services in SPIDR share the same Common Data Model and compatible metadata schema.

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