

Demonstration of Solar-Terrestrial Data Analysis and Reference System (STARS)

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In the present study, we will demonstrate a network software system named STARS (Solar-Terrestrial data Analysis and Reference System). The system works on Windows PC. Thus, if our computer is connected with any network, we will show how to get data file information, how to access to the observation data files, and how to draw data. We also attempt to demonstrate how to manage STARS database as a data site manager.

Recently, a large amount and variety of satellite data has been available. As more satellites launched in the future, so quantity and quality of the data increase. Researchers can now easily access to observation data for large-scale Solar-Terrestrial Physics (STP) through the Internet. However, for integrated studies system with help of a variety of observation data together, we need a distributed network database system with which users are able to access to any observation data with high transparency.

We herein propose a distributed database system for STP data. The system is named Solar-Terrestrial data Analysis and Reference System (STARS). The STARS is composed of two sub-systems; two data analysis systems (user application; STARSdb and STARSplot) and a data administration system (data management tool; STARDUST). One of the data analysis systems, the STARSdb, is to access to data files which are saved, managed, and distributed at a variety of institutes and laboratories. Users access to the data files through STARSdb, then the STARSdb downloads the data files if the files are accessible (allowed to download) to the user.

The STARSplot is the other user tool to draw plots for the data which are downloaded through the STARSdb. The STARSplot tool also provides with the function to analyze multiple data within it; User can, for example, compare two or more kinds of data and examine the correlation between multiple data. This tool is designed with an Object-Oriented Methodology. This implies that any other users can easily add their own function to analyze, plot, or visualize data.