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A Space Physics Archive Search and Extract (SPASE) System for Data Access and Retrieval

This proposal concerns the Space Physics Archive Search and Extract (SPASE) system. The existing SPASE consortium intends to create a data search and retrieval system for the Space Physics science community. This will allow searching for data across multiple, diverse, international data archives through a single search mechanism. Underlying this effort is a common data dictionary/data model that serves as an "interlingua" to translate the user's query into the language understood by each individual archive and to put the metadata search results into a common language for intercomparison. SPASE allows the user to compare search results from the multiple archives through information sorting, visualizations, etc., and to extract data sets or parts of data sets based on these intercomparisons, such as parts of data sets spanning common time intervals. Some initial work has been done for SPASE but funding now is necessary to build a robust system on a reasonable timescale. In particular, it is necessary for a critical number of collaborating archives to be ready more or less simultaneously. Parts of SPASE require implementation at these individual data archives. We have assembled a team that is sufficient to demonstrate that SPASE can connect very heterogeneous archives of both satellite and ground-based data. The SPASE system that is created will be a very useful tool for space physics researchers even with only the archives participating in this proposal. It will be useful not only in locating and acquiring data, but also in connecting to services to help understand which data are useful. While connecting the diverse data centers together we will develop a variety of software tools which will ease the connection of other data centers to SPASE. We anticipate others joining in the effort using their own resources. In particular we will be working to connect with the Space Physics Virtual Observatories as they develop. This will facilitate the multi-discipline studies crucial to the understanding of Sun-Earth Connection science.