

Project Details

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Project Title:

Solar Information Processing Workshop VI: Optimizing the Scientific Return from Petabytes of Data

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Summary:

The immense volume (>1 TB/day) of complex, multi-dimensional data delivered by the LWS mission Solar Dynamics Observatory (SDO) is now streaming into the solar and heliospheric community. Tools such as the Heliophysics Event Knowledgebase (HEK) and the Lockheed-Martin Solar and Astrophysics Laboratory (LMSAL) data cutout service make it simple for scientists to acquire the science data from SDO. Many other science data are available via the Virtual Solar Observatory (VSO).

The amount of science data available to the scientific user community has never been greater. However, with these large data volumes comes the significant challenge of optimizing the scientific return from these data. We propose a workshop to examine the challenge of how to extract the useful information from all the available science data. A solar information processing workshop is an ideal environment to discuss the challenges involved in a new era of data analysis where it is possible for a single scientist to examine terabytes of data and millions of events in search of scientifically useful information. We will address topics such as feature recognition and tracking, fusing of event information from multiple wavelengths, the three-dimensional reconstruction of the extended solar corona, and on data-mining techniques applied to solar physics databases such as the HEK. We will do this within the context of the Solar Image Processing Workshops, which will be re-named hence forward as the Solar Information Processing Workshops.

Solar Information Processing Workshop VI (SIPWVI), to be held on 13-16 August 2012 at Montana State University in Bozeman, MT, will follow the format of the previous solar image processing workshops with mornings given over to presentations to all participants of the workshop, and afternoons working groups focusing on specific topics targeted to the needs of the LWS program. Further, in response to previous attendees suggestions, we will also have a special problem-solving session where new challenges in solar information processing will be presented in order to generate fresh approaches. We request funding to support a workshop of 80-100 attendees, with full support for 15 US-based students and three invited speakers. As in previous years, we will publish the workshop results in a refereed journal. This workshop supports the Cross-Discipline Infrastructure Building Programs component of the LWS TR&T solicitation.

Publication References:

no references