

2008 Geoinformatics Conference (11-13 June 2008)

## **Paper No. 5-1**

**Presentation Time:** 9:40 AM-10:00 AM

# **SEMANTIC PROVENANCE FOR IMAGE DATA PROCESSING**

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A limiting factor for some virtual observatories, which intend to make image diverse data sets available to a diverse user base is that the following use cases are very difficult to implement:

Determine which flat field calibration was applied to the image taken on January, 26, 2005 around 2100UT by the Advanced Coronal Observing System (ACOS) Mark IV polarimeter.

What processing steps were completed to obtain the ACOS Polarimeter for Inner Coronal Studies, limb image of the day for January 26, 2005?

What was the cloud cover and atmospheric seeing conditions during the local morning of January 26, 2005 at the Mauna Loa Solar Observatory?

Key to addressing these use cases is required information that was either not collected from different stages in the data processing pipeline or was but not propagated. In a semantic web context, this information is called knowledge provenance. We describe the provenance requirements that have emerged in our previous work on virtual observatories as well as requirements identified from a series of uses cases collected from scientific data users and instrument scientists. We will describe the progress we are making on meeting these requirements in the context of solar physics image data processing pipelines as well as the general applicability to generic data ingest pipelines.

The Semantic Provenance Capture in Data Ingest Systems (SPCDIS) is a NSF OCI/SDCI-funded project to implement an extensible meta data provenance scheme within the Virtual Solar-Terrestrial Observatory ([www.vsto.org](http://www.vsto.org)).

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Session No. 5

[Geoinformatics Oral Session III](#)

GeoForschungsZentrum Potsdam, Building H: Main Lecture Theater

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