NASA SBIR/STTR Technologies

Remote Data Exploration with the Interactive Data Language

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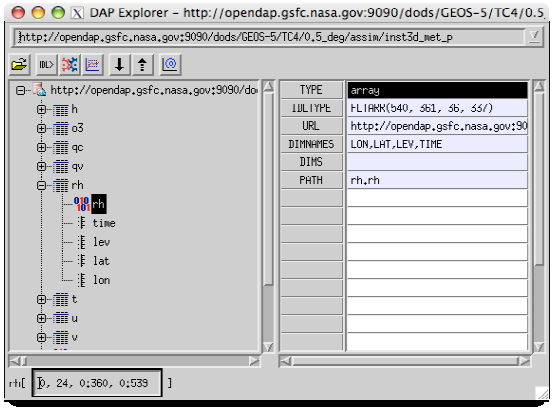
Identification and Significance of Innovation

How to access vast amounts of data produced by NASA missions?
- Use the DAP open standard in the familiar environment of IDL.

IDL: data analysis tool widely used in NASA missions
- IDL's DAP bindings are incomplete.

Innovation:
- Improve tools to enable IDL to access sections of large datasets
- Provides same coding interface for open-source GDL
- Targets novice and expert IDL programmers

Significance:
- Scientists get access to open standard for remote data access in a familiar environment



Innovation enables data exploration of remote data.

Technical Objectives

- Speed up computations involving remote data.
- Improve usability of accessing remote data.
- Advance the toolset to market-ready quality.
- Advance GDL's DAP capabilities to IDL's level.

Work Plan

Task 1: Create an IDL server-side function to execute IDL scripts.
Task 2: Integrate DAP Explorer with task farming API, TaskDL.
Task 3: Improve user-created macro system in DAP Explorer.
Task 4: Create DAP arrays with IDL indexing syntax.
Task 5: Provide a common interface for local and remote datasets.
Task 6: Improve the GDL network library.
Task 7: Create a pure IDL DAP client.
Task 8: Enhance testing and create user documentation.

NASA Applications

- IDL widely used throughout NASA
- Accessing large amounts of data for processing and visualization is a common problem

Non-NASA Applications

- IDL widely used in academia, industry, national labs
- Data analysis in various areas can benefit from accessing remote data, e.g. remote sensing, medical imaging, chemical engineering

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