



Multi-Sensor Data Synergy Advisor (MDSA)

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Objective

- Capture scientist knowledge (rulesets) of the science & data quality characteristics
- Encode this knowledge so a computer can retrieve it
- Present only the safe comparisons, or the caveats for speculative comparisons
- Provide user-tunable quality screening
- Generate the Giovanni workflow and record the associated provenance

Approach

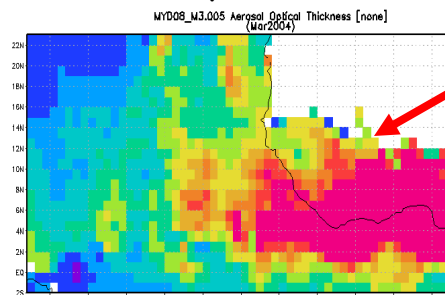
- Semantic Web and ontologies to capture essential parameter details, quality and caveats
- PML and tools from the Inference Web project to capture inter-relations of the provenance
- Reasoners to automatically evaluate potential inter-comparisons as valid, speculative or invalid, providing an explanation of the result
- Giovanni as testbed for implementation

Co-Is/Partners

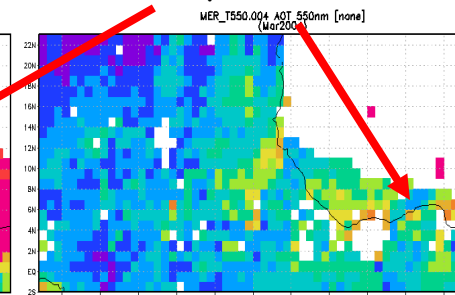
Chris Lynnes, NASA GSFC
Ana Prados, UMBC

Peter Fox, RPI
Suhung Shen, GMU

Same parameter



Same space&time



Different provenance



Different result

Importance of capturing and using provenance

Key Milestones

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|--|----------|
| • Use Cases Formulation | Sep/2009 |
| • Ontology and Ruleset Development | Mar/2010 |
| • Ontology Tool Prototype Deployment | Sep/2010 |
| • User Interface Proof of Concept | Mar/2011 |
| • Advisor Service Integration | Sep/2011 |
| • Use Case Implementation and Validation | Mar/2012 |

TRL_{in} = 2

