



# CSSI Framework: Software: Collaborative Research: CyberWater—An open and sustainable framework for diverse data and model integration with provenance and access to HPC

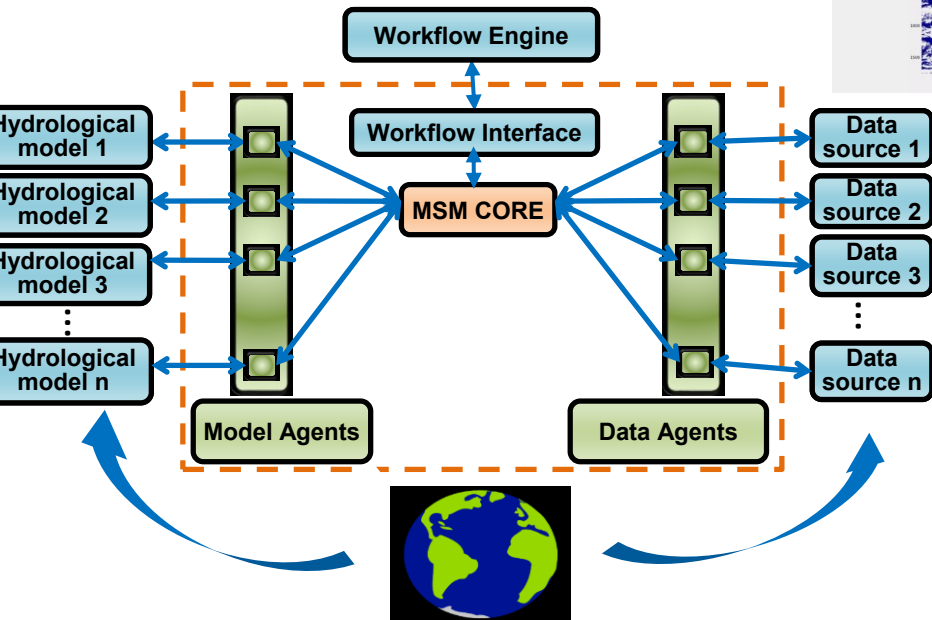
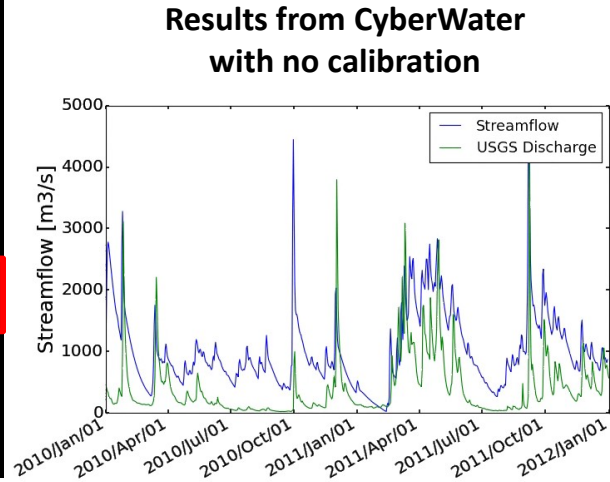
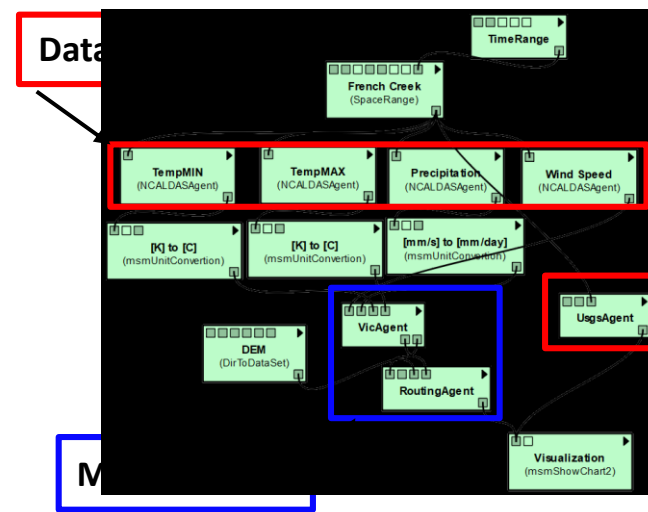
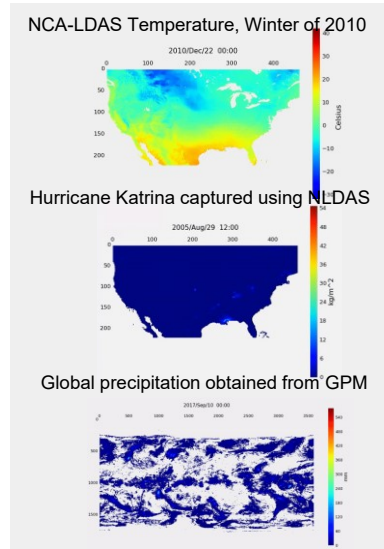
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**Current Status:** CyberWater allows users to access data, and easily execute models in geosciences

**Motivations:** To significantly reduce time and effort for data and model integration applications

**Objectives:** To build an open data, open modeling framework software – **CyberWater** – to expedite the process of fundamental scientific explorations and discoveries and significantly reduce time and effort for data and model integration applications



CyberWater architecture of open data, open modeling framework

## Intellectual Merits of CyberWater include:

- Novel architecture enabling dramatic reduction in model integration complexity
- Effective model agent tool enabling easier coupling of diverse models without coding
- Capability for incorporating diverse data sources and automating data flow to model in real- or near real-time
- New high performance computing (HPC) middleware design enabling access to HPC on demand
- Capacity for supporting reproducible computing

## Broader Impacts of CyberWater include:

- Addressing several critical issues faced by user communities
- Offering an open and sustainable platform that maximizes the level of harmonization among diverse data sets for various model inter-comparison, evaluation, and integration activities
- Facilitating multi-model assessment using multiple data sets
- Available to broad communities through CUAHSI HydroShare