Real-Time Data [1]

Submitted by erinmr on Fri, 2014-01-10 10:32   Wednesday, January 8, 2014 - 16:00 to 17:30
Event: Winter Meeting 2014 [2]
Session Type: Breakout [3]
Abstract/Agenda:
The importance of real-time scientific data is increasing, particularly in mission critical scenarios where informed decisions must be made rapidly. Due to the advancement of monitoring networks and real-time access to these data, many interesting transient phenomena in space-time are being observed that might otherwise go unnoticed. Initiatives such as EarthCube propose to provide an unprecedented framework for disseminating and analyzing historical data sources, and the use of real-time data raises an additional set of complex challenges: 1) sensors may fail during deployment and reconfiguration of the remaining sensors may be necessary under these conditions, 2) latency issues may arise due to hardware and network constraints, 3) data and information may not be presented in a fashion that is easily analyzed and interpreted by decision-makers during a hazardous or time-critical event , 4) unexpected or new phenomenon during a field experiment may trigger the need to rapidly shift modeling and sampling strategies and 5) standards and protocols for real-time data streams and advanced visualization tools are limited in many cases.

We will have brief talks on the following topics:

o Responding to real-time events from sensor networks
o Using real-time data to guide field experiments
o Automated and adaptive sampling strategies that respond to changing phenomenon
o Getting timely information and data to decision makers during hazards or time-critical events

An EarthCube Workshop focusing on the integration of real-time data into the EarthCube framework took place in June 2013. We will present a sample of use cases of real-time data in the geosciences and discuss some of the outcomes from the workshop last summer.

Notes:
Real-time Data

Session organizers list?

Use Cases for Real-time Data:

Branko Kerkez - Sensor Web

NeoMote Hardware

Questions about power usage

Adaptive sampling based on Weather Underground

Improve scientific experiment on the fly

Mike Daniels - NCAR

Real-time atmospheric data collection examples

Chat system on aircraft

Connecting data to forecasting model in real time / adjust mission

RC instrumentation (NASA GlobalHawk)

Student participation is a big component

Agile programming cycle

Automation is important

"Responsive Web Design" toolkit

Q: Do you do compressed

John Orcutt - Histrical View of the Evolutio of Rel-time Access an dControl - Ocean Observatories

Notes takers:

Participants:

Name: Kevin Dobbs [4]
Organization(s): University of Kansas [5]

coming soon

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