[Raskin Scholar: Cloud Computing for Earth Science](#) **[1]**

Submitted by erinmr on Sun, 2014-06-29 20:49   Wednesday, July 9, 2014 - 16:45 to 17:15
Event: [Summer Meeting 2014](#) [2]
Session Type: [Breakout](#) [3]
Expertise Level: [Beginner](#) [4]
Abstract/Agenda:
Earth sciences pose grand challenges for computing technology, especially, in aspect of data intensity, computing intensity, and concurrent intensity. These intensity challenges are well reflected in Earth science modeling and geospatial data processing/analyzing. Cloud computing provides a potential solution to handle the intensity challenges of Earth science by 1) providing on-demand and scalable computing resources to ensure adequate computing power for Earth science model simulation, and 2) enabling distributed data management and parallel data processing in a flexible and scalable manner. Two research examples are used to demonstrate how cloud computing can be utilized to 1) support Earth science modeling through Model as a Service, and 2) support big geospatial data analysis by building a cloud-enabled scientific workflow platform. The research examples show that cloud computing provides a potential computing infrastructure that enables the computability of Earth sciences.

Notes:
"Cloud Computing for Earth Science"
-Discussion of workflow of modeling
-Challenges of BIG earth science data sets and the requirements of large computational resources
--Challenges to big computation: computing intensity, large size of data, procedure complexity
-Discussion of complexity of modeling procedure
-Can cloud computing help?

Research Example 1: MaaS
-MaaS: Models as a Service
-MaaS: Service model in context of cloud computing, facilitating model simulation by publishing modeling related processes as services in a cloud environment
-Layered Framework
-MaaS can automatically start, configure and run Virtual Machines based on the desired modeling hardware requirements. Scalable!
-MaaS Demo Video https://www.youtube.com/watch?v=ye7pQj2Lfqo [5]
-Workflow Demo Video https://www.youtube.com/watch?v=vIim-AhIkss [6]

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