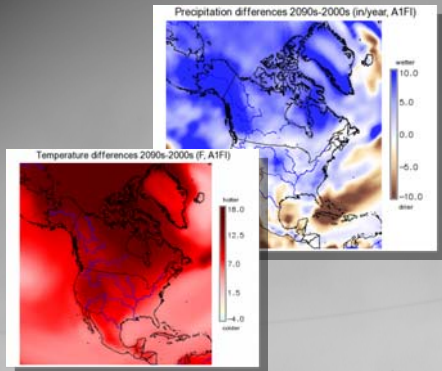


# Developing Climate Change Science Informatics at Oak Ridge National Laboratory: An Essential Capability to Bridge Domain Science and High Performance Computing



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CLIMATE INFORMATICS: The application of information science to capture scientific knowledge in the context of integrated climate and environment research (climateinformatics.ornl.gov).



## Use Cases

1. Evaluation/test of CCSM4 biases in hydrology (precipitation, soil water, runoff, river discharge) over the Rio Grande Basin. User: climate modeler
2. Investigation of projected changes in hydrology of Rio Grande Basin using the VIC (Variable Infiltration Capacity Macroscale) Hydrologic Model. User: watershed hydrologist/modeler
3. Impact of climate change on agricultural productivity of the Rio Grande Basin. User: climate impact scientist, agricultural economist.
4. Renegotiation of the 1944 "Treaty for the Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande". User: A US State Department analyst or their counterpart in Mexico.

## Initial Results



## Metadata Tagging Tool



## Next Steps

1. Tool Enhancements:
2. Data Repository
3. User Testing
4. ???

## 330+ Gb Data

1. Climate Models
2. US Geological Survey (USGS)
3. International Boundary & Water Commission (IBWC)
4. National Climatic Data Center (NCDC)
5. GIS Layers
6. MODIS
7. Other pre-processed precipitation product (PRISM)

## Collaboration Space

