

CSSI Framework: HydroShare: Cyberinfrastructure for Advancing Hydrologic Knowledge through Collaborative Integration of Data Science, Modeling and Analysis

PI: David Tarboton^a, Ray Idaszak^b, Shaowen Wang^c, Jeffery Horsburgh^a, Dan Ames^d, Jon Goodall^f, Alva Couch^e, Hong Yi^b ^aUtah State University, ^bRENCI University of North Carolina, ^cUniversity of Illinois, ^dBrigham Young University, ^eTufts, ^fUniversity of Virginia

Advancing Hydrologic Understanding

- requires integration of information from multiple sources
- is data and computationally intensive
- requires collaboration and working as a team/community

HydroShare is a system to advance hydrologic science by enabling the community to more easily and freely share products resulting from their research, not just the scientific publication summarizing a study, but also the data and models used to create the scientific publication.

- **F**indable
- Accessible
- Interoperable
- **R**eusable
- Transparency

Open data

- Reproducibility
- Trust

Data and Model Repository

http://www.hydroshare.org



NSF CSSI PI Meeting, Seattle, WA, Feb. 13-14, 2020

Web App Gateway JupyterHub

and data in this resource illustrate the use of Te s-168-155.jetstream-cloud.org/user/den	 Write and execute code in a Jupyter Notebook, acting on content of HydroShare resources and saving results back to HydroShare Repository Reproducibility Collaboration Access to enhanced computation
form actions on them.	Upload New V 3
/ Downloads / 18984997bf8f44dd99a244	id4fbece903 / 18984997b18f4dd99a246d4fbece903 / data / contents Name ↓ Last Modified File size seconds ago
M.ipynb	Running 13 minutes ago 17.8 kB
if	13 minutes ago 56.8 MB
rt	13 minutes ago 1.73 kB
TauDEM (unsaved changes)	Logout Control Panel
View Insert Cell Kernel V	Vidgets Help Not Trusted Hydro-Python3 O
▲ ↓ N Run ■ C →	Markdown V 🖾
Hydrologic Terrain Analysis Using TauDEM	
The purpose of this notebook is to intro Hydrologic Terrain Analysis in Jupyter. T extraction and analysis of hydrologic inf State Lipiversity (LISI) for hydrologic di	Juce Terrain Analysis Using Digital Elevation Models (TauDEM) software for auDEM is a free and open source set of Digital Elevation Model (DEM) tools for the ormation from topography as represented by DEM. This software is developed at Utah ritial elevation model analysis and watersched definiention.

CUAHSI JunyterHut