Soil Moisture Work 2024-09-23

Carrie Hashimoto

To do: data acquisition

Static

- ☒ NLCD
- ☒ DEM 30 m
- ☒ POLARIS 30 m

Temporal

- ☒ SMAP-HB 30 m
- ☐ SMAP-HB 50 km
- ☒ IMERG 10 km

To do: SSPEED model

- ☒ Get model from True
- ☐ Ask about defaults and calibration
- ☒ Run a plan / look at results
- ☐ Get radar rainfall download script from True

Updates

- I think Polaris API is down, so downloaded programmatically from Duke website
- DEM downloaded via OpenTopography, source is still USGS 30 m
- IMERG - Used GES DISC interface to get .txt file of links
  - If possible, build links in script instead and use automated authentification

Updates

- Successfully accessed a subset of the SMAP-HB 30 m data, but haven't accessed full time period's data

HEC-RAS 2D model

- Validated with Memorial Day 2015, Tax Day 2016, and Hurricane Harvey events
- 2 geometries, finer res. one performs better

Next Steps: cGAN prep

- Downscale 30 m data directly with xarray
- Organize directories
  - Directories for each day SMAP data are available, with IMERG inside?
- Dataset extent: bounding box of HUC10 Little Cypress Creek-Cypress Creek watershed
  - Increase to a box matching SMAP-HB better?

Next Steps: HEC-RAS 2D

- Ask True more about the model
- Get the radar rainfall script from True