

The files in this data set contain data that is presented and discussed in a paper in review at *Water Resources Research*, titled:

The Challenges of Simulating SWE Beneath Forest Canopies are Reduced by Data Assimilation of Snow Depth

The data is organized as follows:

- 1) "forEST\_DATA.mat": A matlab data file containing the following variables at the Oregon forEST site:
  - a) LAT\_FOR and LAT\_OPN: The latitude of the forest and open sites, for the purposes of downscaling meteorological data
  - b) LON\_FOR and LON\_OPN: As above, for longitude
  - c) SD\_FOR and SD\_OPN: Time series of snow depth measurements, averaged at the forest and open (respectively)
  - d) SD\_TIME\_FOR and SD\_TIME\_OPN: The time stamps corresponding to the above observations
- 3) SWE\_FOR, SWE\_OPN, SWE\_TIME\_FOR, and SWE\_TIME\_OPN: As above, for SWE observations
- 2) "forEST\_FOR\_MET.mat": A matlab data file containing meteorological forcing data (downscaled NLDAS-2, see manuscript) for the Oregon forEST forested area with the following fields:
  - a) TIME: Time stamps for all hourly meteorological data
  - b) Tair: Air temperature (C)
  - c) P: Precipitation (mm)
  - d) Us: Wind speed (m/s)
  - e) RH: Relative humidity
  - f) Qsi: Shortwave radiation ( $W/m^2$ )
  - g) Qli: Longwave radiation( $W/m^2$ )
- 3) "forEST\_OPN\_MET.mat": Same as (2), but for the forEST open area.
- 4) "snodgrass\_DAT.mat": A matlab data file containing the following variables at the Colorado Snodgrass field site:
  - a) TIME: The time stamps for observations collected at the site
  - b) SD: Snow depth (m)
  - c) SWE: Snow water equivalent (mm)
  - d) RHO: Snow density ( $kg/m^3$ )
  - e) UTME: UTM easting coordinates for the individual field sites
  - f) UTMN: UTM northing coordinates
- 5) "snodgrass\_MET\_2019.mat": A matlab data file containing meteorological forcing data (downscaled NLDAS-2, see manuscript) for the Colorado Snodgrass pit locations in water year 2019. The variables are the same as above. Columns 1-7 correspond to open sites, and columns 8-14 to forested sites.
- 6) "snodgrass\_MET\_2020.mat": Same as (5), but for water year 2020. Columns 1-3 correspond to open sites, and columns 5-6 to forested sites.