This file contains codes written in MATLAB to calculate statistics (R, MSE, SAE, etc.) of Daymet dataset for the hourly weather stations located in Wyoming and Colorado.

“Code01\_Daymet\_*Location\_SAE*.m”

At the first step, it creates a matrix in which each layer is related to one-day records of Daymet. Then, it adjusted the records of Daymet based on the gauge records. The summation of absolute error is calculated between the time series of weather station precipitation records and Daymet during the growing season. Ultimately, SAE at the spatial scale will be exported in a “Geotiff” file that can be imported in other software such as ArcGIS.

In “XXXXX\_Effective.m” file, the goal is to generate the effective rainfall map based on the USDA-SCS approach described in the paper. At the first step, it creates a matrix in which each layer is related to one-day records of Daymet. Then, the actual ET maps estimated by the METRIC model is imported and stored in a matrix. Next, Daymet daily dataset is converted to the monthly time step. Ultimately, according to the monthly records of precipitation and actual ET, effective rainfall is estimated using the USDA-SCS approach. Effective Rainfall maps will be exported in a “Geotiff” file that can be imported into other software such as ArcGIS.

If you have any question regarding the code please send an email to me (m.aboutalebi@aggiemail.usu.edu).