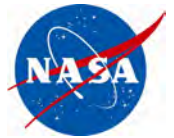# Investigating the Potential of SMAP Soil Moisture for Runoff Prediction

Problem: SMAP products have limited temporal and spatial resolution and subject to uncertainty. Therefore, are they relevant for streamflow prediction?

Study basins and USGS gages

Rainfall-runoff event definition for estimating runoff ratio and antecedent SMAP soil moisture (red triangles)

Findings: Our observation-based study confirms:
(1) Antecedent SMAP soil moisture (SM) has a significant relationship with runoff ratio;
(2) SM-deficit-normalized rainfall has a better predictive power than SM and rainfall.

Relationship between antecedent SMAP soil moisture and soil moisture deficit-normalized rainfall

Impact: SMAP satellite-based product should be assimilated into streamflow prediction models.