

SMAP Products Ranks Best Out of 18 Satellite- and Model-based Research and Operational Products

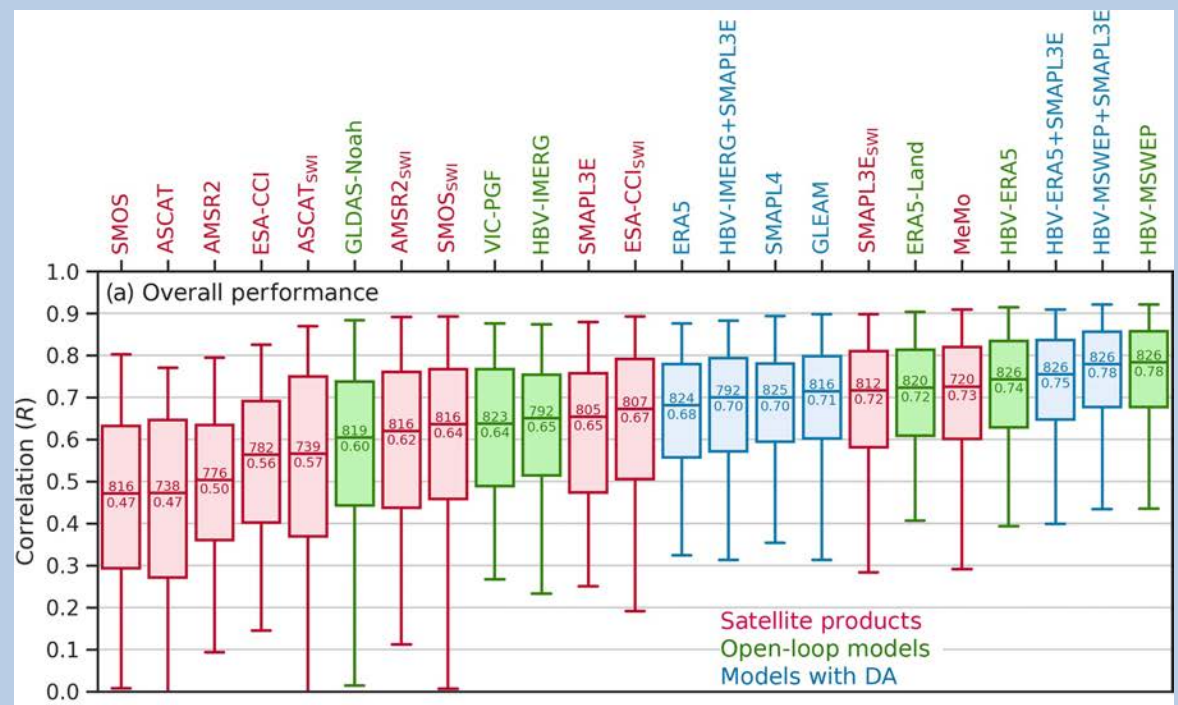


Problem: How well do current research and operational soil moisture products perform?

Finding: The SMAP operational Level-3 (L3) and Level-4 (L4) soil moisture products ranked among the top performers vs. in situ measurements from 826 sensors located primarily in the USA and Europe.

SMAP L3 performed best overall among single-sensor satellite products.

Models with satellite data assimilation (incl. SMAP L4) provided the most reliable soil moisture estimates and exhibited the smallest regional performance differences on average.



Surface soil moisture performance in terms of 3-hourly Pearson correlation (R). HBV research products were calibrated with independent in situ measurements. Subscript SWI indicates Soil Wetness Index smoothing. Numbers above and below median line in each box represent number of sites and median R value, resp.

Impact: Results provide guidance for choosing the most suitable data product for a particular application.