

# SMAP Level 4 Soil Moisture (L4\_SM)

Merging SMAP observations into the GEOS-5 land assimilation system to estimate root zone soil moisture.

On May 8, 2016, a major rain event in the interior of Australia was observed by the Bureau of Meteorology (A) but poorly represented in the global input data for the L4\_SM system (B).

Due to the lack of rainfall in the L4\_SM system, the soil moisture in the model forecast for 21:00 UTC was too dry, and therefore the modeled L-band brightness temperature (Tb) was too high compared to SMAP observations (C).

The L4\_SM analysis of SMAP Tb observations thus resulted in a substantial correction of the model forecast soil moisture (D).

