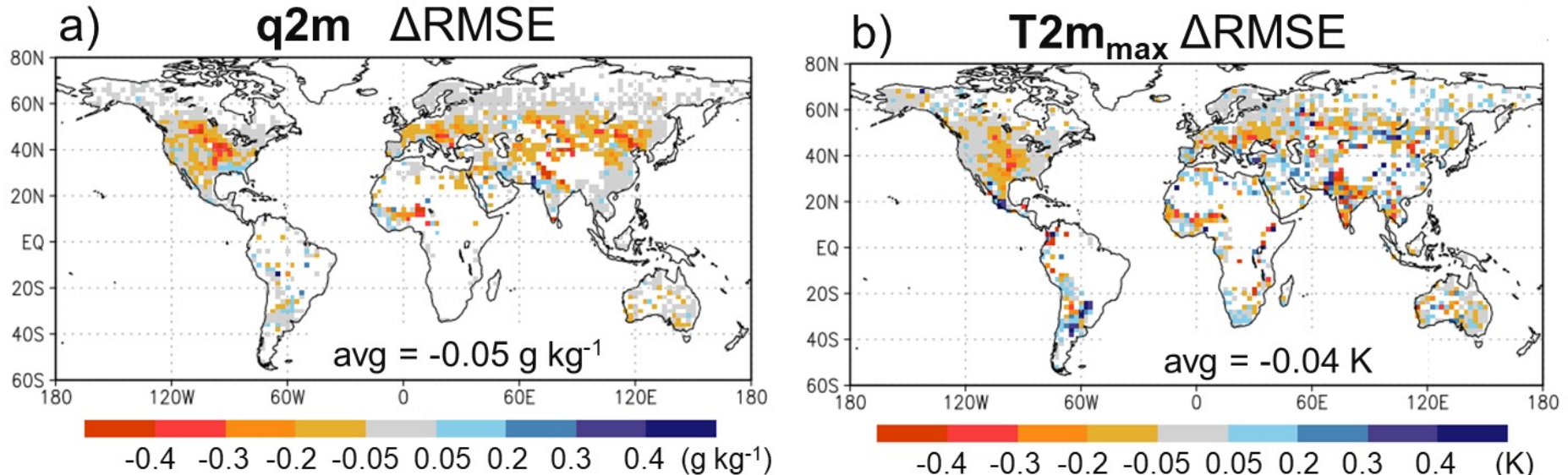


SMAP Observations Can Improve Near-Surface Humidity and Temperature in GEOS Weather Analysis



Assimilating brightness temperature (T_b) observations from the Soil Moisture Active Passive (SMAP) mission in the GEOS weather analysis during boreal summer 2017 improves the skill of soil moisture compared to a system without SMAP assimilation.

Consequently, screen-level specific humidity (q_{2m}) and daily maximum temperature ($T_{2m_{max}}$) also improve, by up to 0.4 g/kg and 0.3 K , respectively, in some regions (red colors in graphic). Results demonstrate the potential of SMAP T_b observations for improving global operational weather analysis and forecasting systems.