The importance of satellite soil moisture assimilation for low-level jet forecasts



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RESULTS

Weakly coupled SMAP DA can result in up to 60 W m⁻² change in SH and LH, 240 m in PBLh, and 4 m s⁻¹ in 850 hPa wind speed. Generally, DA decreases SM, increases winds, and reduces WRF's negative wind bias. The greatest impact on winds is observed at the jet core and exit regions; uncoupled jets tend to be extended and coupled jets shortened.

For Full Details See: Ferguson et al. (2020). Assimilation of Satellite-Derived Soil Moisture for

Improved Forecasts of the Great Plains Low-Level Jet, Monthly Weather Review, 148(11), 4607-4627.



-0.1 -0.05 -0.03 -0.02 0 0.02 0.03 0.05 0.07 0.09 m s

^{0.2 0.4 0.6 0.8 1.0 1.2 1.4 1.6 1.8 2.0} m s