



Ability of the ECMWF model in simulating and analysis of root zone soil moisture on the Tibetan plateau

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An analysis is carried out for two hydrologically contrasting but thermodynamically similar areas using in-situ measurements from two regional soil moisture and soil temperature networks on the Tibetan plateau, for the European Centre for Medium-Range Weather Forecasts (ECMWF) operational land surface analysis system and the new soil moisture analysis scheme based on a point-wise Extended-Kalman Filter (EKF) for the global land surface. For the cold semiarid Naqu area the ECMWF model overestimates significantly the regional soil moisture in the monsoon seasons, which is attributed to spurious soil texture patterns of soil texture. For the cold humid Maqu network area the ECMWF products have comparable accuracy as reported by previous studies in the humid monsoon period. Comparison between liquid soil moisture content from ECMWF and ground stations measurements and satellite estimates from the ASCAT sensor shows good performances of the ASCAT product as well as the ECMWF soil moisture analysis.