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Initial assessment of in-situ based soil moisture observations over Turkey

Burak Bulut (1), M. Tugrul Yilmaz (1), Michael H. Cosh (2), and Iliana Mladenova (3)

(1) Middle East Technical University, Civil Engineering Department, Water Resources Lab., Ankara, Turkey (burak.bulut_01@metu.edu.tr), (tuyilmaz@metu.edu.tr) , (2) Hydrology and Remote Sensing Lab, USDA, Beltsville, Maryland, USA (michael.cosh@ars.usda.gov), (3) NASA Goddard Space Flight Center, Greenbelt, Maryland, USA (iliana.e.mladenova@nasa.gov)

Many hydrological applications are linked with water and energy balance equations. Given soil moisture is a common variable in both water and energy balance equations, it plays a critical role in many hydrological, atmospheric, and agricultural applications, like flood-, climate change-, land/atmosphere-, crop water requirement-related studies. This variable can be obtained using multiple platforms, like ground-based stations, remote sensing, and hydrological models. Among them station-based soil moisture observations arguably have the greatest role in estimating the true soil moisture values or the error characterization of remotely sensing- or hydrological model simulation-based values, even though station-based observations suffer from the sparsely located stations. Soil moisture has been observed in Turkey since 2007 over 149 stations, while the quality control of these stations have not been done before. In this study observed time-series have been quality controlled for their response to precipitation events and calibrated against the soil type and temperature of the soil medium. This study was supported by TUBITAK fund (#114Y676).