



## **Can a time-stable location for soil moisture be identified from a remote site with substantially different rainfall and evapotranspiration regimes?**

Xiaodong Gao, Xining Zhao, and Pute Wu

Institute of Soil and Water Conservation, Northwest A&F University, Yangling, China (donniao@gmail.com)

Time stability analysis is an important approach for soil moisture upscaling. Usually, a time-stable location (TSL) is identified within the site under consideration (target site). Recently, Gao et al. (2013b) found a TSL relative to the target site, in this study termed an extended time-stable location (ETSL), using a nearby forecasting site. This provides insights into understanding soil moisture in hard-to-access places. The main objective of this study was to test whether an ETSL can be identified from a remote forecasting site where substantially different precipitation and evapotranspiration regimes exist. The experiment was carried out using surface observations at three different sites on the Loess Plateau. These were a gully as the target site, the adjacent jujube orchard as a nearby forecasting site, and another jujube orchard (Mizhi site), around 60 km away from the gully, as a remote forecasting site. The results showed that no ETSL was identified at the Mizhi site, most likely due to the substantially different precipitation and evapotranspiration there. We argue that the prerequisite of the existence of an ETSL is that the forecasting and target sites should have similar precipitation and evapotranspiration regimes.