# Evaluation of Relations among Drought Indices and Remotely Sensed Soil Moisture Datasets over Turkey

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Drought is globally classified as a natural disaster due to the damage it causes. As a result, detection of its characteristics is essential for understanding and reducing the adverse effects of this natural disaster and improving its prediction. Spatial distribution and temporal changes of soil moisture is one of the important components in climatic, ecological and natural hazards at global, regional and local levels scales. In this study, different drought indices (i.e. SPI, SPEI, PDSI) and remotely sensed soil moisture (SM) products are used to analyze the droughts in Turkey.

The drought analysis is performed using the standardized soil moisture datasets (i.e. zero mean and one standard deviation) using emerged remotely sensed soil moisture datasets provided by ESA CCI SM and drought indices are calculated based on in-situ measurements (e.g., precipitation, temperature, soil moisture, etc.). While the drought events are defined as consecutive negative anomalies less than -1 for longer than 3 months' duration. Accordingly, the drought characteristics (duration and severity) obtained from soil moisture datasets and drought indices are compared in spatiotemporal space.

All the analysis are done with same spatial resolution with soil moisture data and time period between 1981 to 2017. The initial results shows that, spatial coverage of drought obtained from PDSI is more consistent with soil moisture data. However, this consistency decreases over the irrigated lands.