



## **Analysis of Agricultural Drought Using NOAH Root Zone Soil Moisture Estimates and MODIS Based NDVI Values over Turkey**

Burak Bulut, Mehdi Hüsami Afşar, and M. Tugrul Yilmaz

Middle East Technical University, Civil Engineering Department, Ankara, Turkey (burak.bulut\_01@metu.edu.tr)

Analysis of 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. In this study, root zone soil moisture (SM) estimates obtained from NOAH hydrological model and normalized difference vegetation index (NDVI) obtained from MODIS observations are used to analyze the recent agricultural droughts in Turkey that are diagnosed using the crop yield statistics. In this study, soil moisture and NDVI values are used to estimate the crop yield for various scenarios. With the utilization of these commonly used drought indicators parameters (SM and NDVI) a detailed analysis of 2007 and 2013 drought events as well as the crop yield conditions between years 2000 and 2016 have been carried out.