

## VEGETATION CONDITION ESTIMATION USING SATELLITE IMAGE TIME SERIES ANALYSIS

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**ABSTRACT:** Vegetation condition is influenced mainly by precipitation and temperature. The continental climate of Romania territory with long periods of high pressure can cause a lack of precipitation for a month or two allows a quite high risk of drought and plants stress. Droughts are normal climate episodes, but they are also among the most expensive natural disasters. Knowledge about timing, severity and extension of drought can aid in planning and decision-making. There are several possibilities of vegetation condition monitoring based on ground measurements, hydrological and climatological data. Another possibility is to use remote sensing data. The lack of precipitation and high temperatures determine drought. The vegetation under temperature and water stress have different spectral signature.

In this paper an experiment is described with the use of SPOT VEGETATION satellite data for estimation of vegetation conditions. By evaluating an eleven-year time series of Normalized Differential Vegetation Index (NDVI), the possibility of monitoring of drought with a rather simple approach is presented. The result is a map of drought stress at the country level. Not only the occurrence of drought in years 2000 and 2003 was confirmed, but also the dynamics of vegetation development during the vegetation period can be studied for different places of the country.