A simple interpretation of the surface temperature/vegetation index space for assessment of surface moisture status - DTU Orbit (16/01/2019)

A simplified land surface dryness index (Temperature-Vegetation Dryness Index, TVDI) based on an empirical parameterisation of the relationship between surface temperature (T-s) and vegetation index (NDVI) is suggested. The index is related to soil moisture and, in comparison to existing interpretations of the T-s/NDVI space, the index is conceptually and computationally straightforward. It is based on satellite derived information only, and the potential for operational application of the index is therefore large. The spatial pattern and temporal evolution in TVDI has been analysed using 37 NOAA-AVHRR images from 1990 covering part of the Ferlo region of northern, semiarid Senegal in West Africa. The spatial pattern in TVDI has been compared with simulations of soil moisture from a distributed hydrological model based on the MIKE SHE code. The spatial variation in TVDI reflects the variation in moisture on a finer scale than can be derived from the hydrological model in this case. (C) 2002 Elsevier Science Inc. All rights reserved.

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