



Long-term vegetation activity trends in the Iberian Peninsula and The Balearic Islands using high spatial resolution NOAA-AVHRR data (1981 – 2015).

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We have analysed trends in the Normalized Difference Vegetation Index (NDVI) in the Iberian Peninsula and The Balearic Islands over the period 1981 – 2015 using a new high resolution data set from the entire available NOAA – AVHRR images (IBERIAN NDVI dataset). After a complete processing including geocoding, calibration, cloud removal, topographic correction and temporal filtering, we obtained bi-weekly time series. To assess the accuracy of the new IBERIAN NDVI time-series, we have compared temporal variability and trends of NDVI series with those results reported by GIMMS 3g and MODIS (MOD13A3) NDVI datasets. In general, the IBERIAN NDVI showed high reliability with these two products but showing higher spatial resolution than the GIMMS dataset and covering two more decades than the MODIS dataset. Using the IBERIAN NDVI dataset, we analysed NDVI trends by means of the non-parametric Mann-Kendall test and Theil-Sen slope estimator. In average, vegetation trends in the study area show an increase over the last decades. However, there are local spatial differences: the main increase has been recorded in humid regions of the north of the Iberian Peninsula. The statistical techniques allow finding abrupt and gradual changes in different land cover types during the analysed period. These changes are related with human activity due to land transformations (from dry to irrigated land), land abandonment and forest recovery.