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Spatio-temporal patterns of natural vegetation dynamics for different land use and ecosystems over Europe 1997-2011

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The Fraction of Absorbed Photosynthetically Active Radiation (FAPAR) is an important global variable suitable from regional to large-scale monitoring of climate impacts on the terrestrial biosphere.
In this work, we analyze vegetation dynamics over the European domain (25°N–72° N; 32°W–70° W) using FAPAR 10-days composites at $\sim$ 1 km resolution from 1997 to 2011 obtained from the combination of two satellite-based sensors. We exploit the most extensive data set of FAPAR available today at European scale derived by NASA/Sea-viewing Wide Field-of-view Sensor (SeaWiFS) onboard the SeaStar spacecraft and ESA/Medium Resolution Imaging Spectrometer Instrument (MERIS) onboard ENVIronmental SATellite (ENVISAT).
The approach proposed here is to combine our understanding of the dynamics of the vegetation from Earth Observation and land cover information. This work presents the seasonal and interannual vegetation variations and the spatio-temporal patterns of dynamics over Europe. We propose a set of new vegetation metrics for identifying phenological variations for several land use. Verification are done through a direct comparison against ground-based data over ecological sites.