

Poster.4: . **New Leaf Area Index data for CORDEX FPS-SESA simulations**

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Abstract

As resolution in climate modeling increases towards kilometer-scale, there is a need to consider static data for climate factors such as land surface characteristics with increased details and accuracy. Leaf area index (LAI) is an important quantity in land surface modeling that characterizes phenology, accounting for the one-sided green leaf area per unit ground surface area. LAI affects net land surface radiation by modulating albedo and energy partitioning between latent and sensible heat flux. Phenology also has a direct influence on intercepting precipitation, evapotranspiration and runoff.

LAI in the Weather Research and Forecasting (WRF) model can be obtained from a lookup table, depending on the land use category, or from LAI maps based on the MODIS satellite-derived climatology. More complex land surface models in WRF include a dynamic vegetation model that calculates LAI. Over Europe, LAI taken from the lookup table or default map input in WRF are shown to be considerably low for some land use categories, especially for croplands which cover an extensive area of the European continent. Therefore we prepared a new static data set for WRF based on the 15-year SPOT satellite-derived climatology. SPOT is a high resolution Earth imaging satellite system operated by the French Space agency.

In this work we introduce this updated LAI data set for WRF and show some initial results of model sensitivity to LAI for the convection permitting CORDEX FPS-SESA simulations.