



Impact of vegetation cover variability on surface energy and carbon fluxes

Souhail Boussetta, Gianpaolo Balsamo, Emanuel Dutra, Anton Beljaars, Clement Albergel, Patricia De Rosnay, and Joaquin Munoz-Sabater
ECMWF, Reading, UK

The effects of vegetation coverage distributions on surface energy and carbon fluxes predictions from the land surface model are investigated. The model is applied at global scale and a comparison between two vegetation cover configurations is performed. In the first configuration, the vegetation cover is based on a fixed prescribed map, in the second the vegetation cover varies based on satellite observation of Leaf Area Index according to a modified Beer-Lambert law which includes vegetation clumping. The impact of consideration of vegetation cover variability on surface fluxes derived from offline runs of the ECMWF land surface scheme is studied. The near-surface air temperature and humidity derived from coupled runs using the ECMWF Integrated Forecasting system (IFS) and the carbon dioxide will be shown to respond to vegetation changes.