JRC Dataset

Biophysical effects of vegetation cover change from satellite and models

Description:
Vegetation cover changes associated with land use and land cover change (LULCC) can perturb the local surface energy balance, which in turn can affect the local climate. Land surface models (LSMs) can be used to simulate such land-climate interactions, but their capacity to model these biophysical effects accurately across the globe remain unclear due to the complexity of the phenomena. This dataset provides idealized simulations from four LSMs (JULES, ORCHIDEE, JSBACH and CLM) that are harmonized with estimations obtained from satellite observations, enabling the inter-comparison and benchmarking of LSM performances and which can serve to identify model limitations and prioritize efforts in model development. The dataset provides the change in latent heat flux, in combined sensible and ground heat flux and in net radiation caused by 15 specific vegetation cover transitions on a 1° by 1° grid at monthly time scale for a synthetic year based on data from 2008 until 2012. The dataset was generated from a collaborative effort lead by JRC within the FP7 LUC4C project (luc4c.eu).

Contributors:
- Duveiller, Gregory gregory.duveiller@ec.europa.eu
- Forzieri, Giovanni giovanni.forzieri@ec.europa.eu
- Robertson, Eddy None
- Li, Wei None
- Georgievski, Goran None
- Lawrence, Peter None
- Wiltshire, Andy None
- Ciais, Philippe None
- Pongratz, Julia None
- Sitch, Stephen None
- Arneth, Almut None
- Cescatti, Alessandro alessandro.cescatti@ec.europa.eu

How to cite:
Duveiller, Gregory; Forzieri, Giovanni; Robertson, Eddy; Li, Wei; Georgievski, Goran; Lawrence, Peter; Wiltshire, Andy; Ciais, Philippe; Pongratz, Julia; Sitch, Stephen; Arneth, Almut; Cescatti, Alessandro(2018): Biophysical effects of vegetation cover change from satellite and models. European Commission, Joint Research Centre (JRC) [Dataset] PID: http://data.europa.eu/89h/jrc-10093-10001

Related resources:
Data access
NetCDF Distribution
https://doi.org/10.5281/zenodo.1182145

Publications
Biophysics and vegetation cover change: a process-based evaluation framework for confronting land surface models with satellite observations
DOI:10.5194/essd-10-1265-2018

Additional information:
Issue date: 2018-02-21
Landing page: https://ec.europa.eu/jrc/
Geographic area: European Union
Update frequency: None
Language: English
Data theme(s): Science and technology