Gregory Duveiller, PhD

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Background

Grégory Duveiller has a scientific background in agronomy, forestry and remote sensing. He received his M.Sc. degree in agricultural engineering from the Université Catholique de Louvain (UCL) in 2005. He then joined the UCL-Geomatics research group within the Earth and Life Institute (ELI) of the UCL to assess tropical deforestation rates in central Africa using remote sensing. In January 2011 he presented at UCL his Ph.D. thesis on the use of remote sensing for crop monitoring at multiple scales. More specifically, his research delved with bridging the methodological gap between state-of-the-art quantitative remote sensing of crops and operational crop growth monitoring at regional to global scales. After his thesis, he joined the European Commission Joint Research Centre (JRC), where he performed operational analyses of crop monitoring and yield forecasting, while, in parallel, pursuing research activities in remote sensing for crop monitoring and analysing impacts of climate change on agriculture. Since 2014 he changed research group within JRC to focus on analysing the effects of terrestrial ecosystem on climate, and climate on ecosystems. More specifically, he gathers, post-processes and analyses various land surface datasets of different biophysical variables (land surface temperature, albedo, GPP, fluorescence, etc.) for inter-comparison and validation of land surface ecosystem models in the context of assessing the biogeochemical and biogeophysical effects of land use change on the Earth system.

Activities in education

Grégory Duveiller has given the theoretical and practical lectures on monitoring agriculture and vegetation the 4th, 6th and 7th ESA Advanced Training Course in Land Remote Sensing. He has supervised MSc and PhD

students in quantitative applied remote sensing . He has been as speaker in several international conferences and workshops

Recent projects

- COPERNICUS-F4P. Project to evaluate the fitness-for-purpose of products of the Copernicus Climate Change Service (C3S) [2018-2021 finance by the European Commission DG-GROW]
- LUC4C Project to study the interplay between land use and climate change, assessing the net climate forcing of land use change, and the options for climate change mitigation and adaptation [2014-2017 financed by the EU FP7 programme]
- AGBIO project for "EO data-driven modelling of agricultural biomass production in Europe" JRC Exploratory project [2016-2017 financed by the European Commission DG-JRC]

Selected publications

List 5 most recent/important publications

G. Duveiller *et al.*, Biophysics and vegetation cover change: a process-based evaluation framework for confronting land surface models with satellite observations. *Earth Syst. Sci. Data Discuss.*, 1–24 (2018).

G. Duveiller, J. Hooker, A. Cescatti, The mark of vegetation change on Earth's surface energy balance. Nat. Commun. 9, 679 (2018).

G. Duveiller, J. Hooker, A. Cescatti, A dataset mapping the potential biophysical effects of vegetation cover change. *Sci. Data*. **5**, 180014 (2018).

G. Duveiller, A. Cescatti, Spatially downscaling sun-induced chlorophyll fluorescence leads to an improved temporal correlation with gross primary productivity. *Remote Sens. Environ.* **182**, 72–89 (2016).

G. Duveiller, R. Lopez-Lozano, A. Cescatti, Exploiting the multi-angularity of the MODIS temporal signal to identify spatially homogeneous vegetation cover: A demonstration for agricultural monitoring applications. *Remote Sens. Environ.* **166**, 61–77 (2015).