Geophysical Research Abstracts
Vol. 14, EGU2012-4295, 2012
EGU General Assembly 2012

Modelling carbon emissions in mediterranean fire-prone ecosystems: errors in Translating across scales from global to landscape

F. Mouillot, J. Ruffault, and F. Moebius

IRD, dept DRE, CEFE/CNRS, 1919 route de Mende, 34293 Montpellier Cexdex 5, France (florent.mouillot@ird.fr)

Wildfires are both an agent of disturbance for vegetation dynamic and biosphere/atmosphere carbon fluxes. They affect ecosystems and atmosphere both during the fire event itself (combustion) but also for decades after burning through biomass reconstruction. Fires are initially a stochastic events being part of the natural functioning of ecosystems so that the carbon released during fire events will be sequestrated by vegetation regrowth. Recent modeling studies have started to quantify these changes at the global scale using global remote sensing products. Uncertainties and discrepancies between fire products remain high in burnt surfaces estimates and in turn fire emissions to atmosphere. In addition, translating across scales in different modeling approaches rises key issues that I will develop in this talk. I will focus on the sources of uncertainties in datasets and models, with a peculiar interest on translating across scales in mixed vegetation with an example in the Mediterranean region at the regional scale where local statistics for fire counts, area burnt, and vegetation maps are available. Results on biases in burnt areas, and carbon emissions will be discussed for future needs in global remote sensing products, as part of the ESA fire-CCI project.