



## **Global Fire Emission Modelling for atmospheric Composition and Land Cover Monitoring**

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The global monitoring of the atmospheric composition and of the land surface cover both require input describing the global fire (biomass burning) activity, e.g. tracer emissions, burnt biomass, and burnt areas. We present the fire product requirements expected for the future global atmosphere and land monitoring systems in GMES, i.e. the GEMS and global GEOLAND follow-ups, and conclude that a Global Fire Assimilation System (GFAS) needs to be developed to provide the required fire input for both. Such a GFAS would have to combine several types of satellite-based fire observations with a numerical model of the global fire activity. It would also need biomass estimates and the meteorological conditions as input.

Furthermore, we present the approach for fire emission modelling currently adopted for the global reanalyses of aerosols and carbon dioxide in GEMS. It uses the fire emissions of several tracers from the inventory GFEDv2. First results illustrate both the importance of the fire emissions for the atmospheric composition and the need for future developments of the global fire monitoring capabilities.