



Analysis of pollution transport from forest fires in the Mediterranean during the summer 2007

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Wildfires regularly ravage thousands of hectares of forest in Southern Europe, with strong consequences on air quality and tropospheric chemistry over the whole region. The fire risk is particularly high in the Mediterranean, and is expected to increase as a result of climate change due to warmer and dryer conditions. According to the European Forest Fire Information System (EFFIS), the total area burned during the summer of 2007 was about 810 056 hectares, mainly on forests (~68.2%) but also on agricultural (~31%) and manmade areas (~0.8%). Greece was the most affected country, with 269 114 hectares burned, especially during the extreme fire events in the Peloponnese at the end of August.

Here we present a study of the impact of these fires on atmospheric chemistry over the Mediterranean. Our analysis is based on the available satellite observations of the transported pollution, especially on the distributions observed by the IASI instrument, launched on board MetOp in October 2006. In addition to ozone and carbon monoxide (CO), routinely observed by IASI, a series of short-lived species emitted in large quantities are detected by IASI in the fire plumes. The information on plume height and transport provided by OMI and CALIPSO aerosol measurements is also explored. These observations are combined to simulations from chemistry and transport models for a complete analysis of the impact of these extreme fires.