



Fire emissions in the Euro-Mediterranean area: variability and impact on air quality

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Wildfires are an important source of trace gases and particles, that may impact air quality locally, but also on regional to global scales due to the long-range transport of the emitted pollution plumes. In Europe, regulations and public information have helped reduce the number of fires in the past decades, but thousands of hectares are burned every summer, especially in the Southern states. The additional emissions therefore need to be accounted for in air quality analysis and forecasts.

In this presentation, we discuss the variability of the fire activity observed from space-based instruments (MODIS, SEVIRI) in the Euro-Mediterranean region, and its links to meteorological conditions. We then present the regional emission inventory for trace gases and aerosols constructed based on these satellite observations coupled to the ORCHIDEE vegetation and carbon cycle model, as well as an evaluation of the associated uncertainties. Finally, we discuss the application of this inventory to air quality analysis and forecasting through the implementation of a fire module in the regional chemistry-transport model CHIMERE.