



Ozone forecast over Italy with air quality model BOLCHEM

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Tropospheric ozone pollution is a wide spread air quality problem because of its potential impact on human health and environment. Ozone is formed by a series of complex chemical reactions that involve nitrogen oxide (NO_x) and volatile organic compounds (VOC) in sunlight. Therefore, the amount of ozone in the air depends also on weather conditions such as actinic flux, temperature, pressure, wind speed, humidity. The online coupling between meteorology and gas chemistry as implemented in the air quality model BOLCHEM is beneficial. BOLCHEM is an adequate tool for ozone forecast, in particular, over the Italian peninsula, which has a very complex topography. BOLCHEM comprises a meteorological model, an algorithm for airborne transport and diffusion of pollutants, and two photochemical mechanisms. This work shows the ability of the model to reproduce the observed ozone concentrations in different periods of the year over Italy and shows the sensitivity of ozone to NO_x and VOC reductions.