



OH and HO₂ in the boundary layer as observed during DOMINO

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Reactions with radicals are the main self-cleansing mechanism of the atmosphere. A wide range of chemical compounds emitted by human activities such as industrial processes and traffic, and also by vegetation and animals, are oxidised by reactions with radicals, ultimately leading to their removal from the atmosphere.

The DOMINO (Diel Oxidation Mechanism In relation to Nitrogen Oxides) campaign took place at the Atmospheric Sounding Station - El Arenosillo, a platform of the Atmospheric and Instrumentation Branch of the Spanish National Institute for Aerospace Technology (INTA) dedicated to atmospheric measurements at the coast in the Southwest of Spain in fall 2008, to study the atmospheric oxidation chemistry within the boundary layer during the entire diurnal cycle. Different air masses affected by anthropogenic and/or biogenic emissions were observed at the measurement site: Wind from the northeast transported air from Sevilla (70 km distance) over the pine and eucalyptus forests in the national park, from the northeast urban air from Huelva (25 km) was advected, and air from southwesterly directions was of relatively clean marine origin. A complete suite of measurements needed to study the oxidation chemistry in ambient air was conducted.

The most important atmospheric oxidant is the OH radical, which is photochemically produced in the atmosphere and thus present mostly during daytime. Here we present the observed OH and HO₂ data along with other trace gas measurements, and compare them with calculated OH and HO₂ from a constrained box model. Special attention will be given to the HO_x budget for different air mass origins and compositions.