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HOx radical measurements in the lower troposphere using an airborne laser-induced fluorescence instrument on a Zeppelin NT

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The radical chemistry of the lower troposphere was investigated during the ZEPTER-2 field campaign at Lake Constance in October/ November 2008, using the unique capabilities of a modified Zeppelin NT as an airborne measurement platform. The Zeppelin was equipped with in-situ instruments for measurement of OH and HO2 radicals, the main radical precursors (O3, HONO, HCHO), photolysis frequencies, and prime reactants (NOx, CO, VOCs) of OH. The instrumentation has been used to chemically characterize the planetary boundary layer and the lower free troposphere. Vertical profiles of the trace gases were observed at altitudes up to 1000m above different land surfaces, including Lake Constace, the city of Ravensburg and forests. In this presentation technical details of the measurement platform Zeppelin NT will be presented as well as first results of the HOx radical measurements.