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Modelled and observed vertical ozone distribution in the troposphere over Europe

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Air Quality models are usually verified against surface measurements of air pollutants concentrations. Vertical structure of the atmosphere in terms of the distribution and stratification of trace gases concentration is limited to the boundary layer. In the case of tropospheric ozone the problem with reproducing the ozone profile in the troposphere can also be connected with too low model top and insufficient representation of stratospheric-tropospheric exchange.

We will present the climatology ozone vertical profiles in different locations across Europe based on the GEM-AQ model (Kaminski et al., 2008) simulations undertaken for 2006 in the frame of the AQMEII-I project. The core of the model domain covered European continent with the resolution of 0.22 deg. Modelling results will be compared with ozone soundings from available stations.

Seasonal variability of the observed and modelled ozone profiles will be discussed. Also, the variability pattern will be compared for different regions of Europe. An attempt will be made to correlate the bias of the ozone profile in the ABL with NO_2 column bias in corresponding locations.