



Recent measurements of the mixing layer height in Mexico City: Comparison among regional reanalysis data, ceilometer measurements and a reconstruction from measured total column and surface carbon-monoxide.

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In this contribution we present the first results of a cross-validation of the chemical mixing layer height retrieved from carbon monoxide (CO) column and surface measurements and continuous ceilometer data. The CO total column density is routinely measured by ground based solar and lunar FTIR absorption spectroscopy with 0.5 cm⁻¹ resolution at the UNAM Campus in Mexico City (19,33°N, 99.18°W). The effective mixing layer height (MLH) is reconstructed using this parameter in a simplified box model together with the surface measurements of CO provided by the local monitoring network (RAMA). The reconstruction assumes a constant volume mixing ratio in the mixing layer, a constant background CO column amount above and a constant residual CO concentration which has been included in the model. A ceilometer (Vaisala CL31) is measuring at the same location the backscattering aerosol density from which the MLH is being continuously derived. The reconstruction of the MLH from the backscattered radiation is done with a previously used retrieval code and interprets the distribution of the gradient of the aerosol-concentration. The results from both techniques are presented and compared also with the regional reanalysis data and the differences are analyzed discussed.