## Ozonesonde climatology for model evaluation of the troposphere and lower stratosphere

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We present an ozone climatology based on ozone soundings for the last 15 years to be used by the community for model evaluation and comparisons to other observations, e.g., satellite observations. Ozone profiles for 42 stations around the globe have been compiled, averaged for the years 1995-2009. The profiles are provided as a function of pressure altitude from the surface up to 10 hPa, as well as referenced to the thermal tropopause. In addition to single stations, we provide regional averages by combining stations with similar ozone characteristics. The interannual variability and time evolution of different regions and seasons is discussed, including years before 1995. Besides looking at the 15 year average, we also introduce a new metric to describe the width of ozone distributions for different altitudes. The new metric will allow a more in detailed evaluation of model results. We apply the new climatology and metric to two sets of model results that are part of two model intercomparison activities, the Task Force on Hemispheric Transport of Air Pollution (TF HTAB) for the troposphere and the Chemistry-Climate Model Validation Activity (CCMVal2), which has focused on the stratosphere including the UTLS. In addition, we compare the time evolution of ozone for different regions and altitudes with offline model results from the NCAR Community Earth System Model (CESM).