Geophysical Research Abstracts
Vol. 12, EGU2010-9751, 2010
EGU General Assembly 2010

Deriving mean age of air reference profiles using different methods for mean age calculation

Andreas Engel, Harald Bönisch, and the mean age Team

J.W. Goethe Universität Frankfurt, Institut für Atmosphäre und Umwelt, Frankfurt, Germany (an.engel@iau.uni-frankfurt.de, +49 (0)69 798-40262)

Mean age is one of the most fundamental transport tracers for the stratosphere. It is derived from very long lived tracers which are not influenced by chemical degradation but have a temporal trend in the atmosphere. It is an excellent tool of comparing modelled transport with the real atmosphere. We present different approaches to calculate mean age and compare the results. This method can be used to assess the uncertainties in the different assumptions which need to be made in order to derive mean age from observations.

We further present mean profiles of mean age derived from the data set of SF6 and CO2 observations from the mid latitudes of the northern hemisphere presented in Engel et al., (2009) and on SF6 and CO2 data observed in the tropics and in high latitudes. These profiles can be used to compare modelled mean age with observations when no point-to-point comparison is possible. The differences between the reference profiles for different latitudes regions are discussed.