



Trace gas transport in the UTLS region during the year 2003

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A comprehensive set of 150,000 vertical profiles of the chlorofluorocarbons CFC-11 and CFC-12 has been retrieved from Envisat MIPAS measurements during the years 2002-2004. A sequential approach has been applied to assimilate the MIPAS CFC measurements in the Chemical Lagrangian Model of the Stratosphere (CLaMS) developed in Juelich. As CFCs have photochemical lifetimes similar to dynamical lifetimes in the upper troposphere and lower stratosphere region, they are ideally suited for transport studies. The transformed Eulerian mean (TEM) formalism allows to trace back tendencies of the background atmosphere to transport processes like residual mean circulation and large-scale eddy transport. In the talk we discuss the retrieval and the quality of the data sets, give a description of CLaMS and the assimilation procedure, and show analysis of UTLS trace gas transport based on the TEM formalism for selected time periods during the year 2003.