



STRATOSPHERIC TRACER VARIABILITY: CRISTA MEASUREMENTS AND MODEL RESULTS

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Stratospheric variability is studied on the basis of data from the second mission of the Cryogenic Infrared Spectrometers and Telescopes for the Atmosphere (CRISTA) experiment (August 8–16, 1997).

Standard deviations from zonal means reveal different signatures in tracers as O_3 , CFC11 and HNO_3 . Considering the tracer gradients the structures can be assigned to specific dynamical processes and are interpreted in terms of vertical and meridional transports. To simulate the dynamics during CRISTA 2 a CTM version of the Research for Ozone and its Evolution (ROSE) model driven by UKMO meteorological data has been employed. Starting from zonally averaged tracer fields (from CRISTA and UARS Reference Atmosphere Project, URAP) the model produces standard deviations comparable with those of the CRISTA measurements. Especially a "Region of Maximum Variance" (RMV) at high summer latitudes is found in the measurements. A comparable structure is seen in the model as it develops within a few days.