



Influence of nudging setup on EMAC model results after Major Stratospheric Warming during the winter 2008/09

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The High Energy Particle Precipitation in the Atmosphere (HEPPA) initiative compares several satellite observations to results of different atmospheric models. In the current intercomparison the focus is on indirect effects due to energetic particle precipitation (EPP) after the Major Stratospheric Warming during the winter 2008/09. After this event large amounts of NO_x are transported downwards from the thermosphere into the mesosphere, despite low geomagnetic activity during this winter and therefore low thermospheric production of NO_x . In the HEPPA-II study we focus on the assessment of the EPP source, vertical coupling and on composition changes in the stratosphere and mesosphere due to indirect EPP effects.

In this presentation we used EMAC (ECHAM5 version 5.3.02/MESSy version 2.42p1 Atmospheric Chemistry) model results in comparison with MIPAS satellite observations. For EMAC we used a T42L90MA setup. Here we focus on dynamical effects during and after the Sudden Stratospheric Warming in the winter 2008/09. CO and NO_x are used as dynamical tracers for the comparison between model and observation. We show a detailed comparison for different nudging setups in our model. We changed nudging strength, nudging altitudes and show the difference between including and excluding global mean values in the nudging procedure.