We would like to thank the reviewer for taking the time to assess our manuscript.

In this manuscript, the authors studied the impact of Pinatubo volcanic eruption on the mesospheric temperature obtained from the HALOE instrument. They obsered warming in the mesosphere and compared with the Na lidar temperature results published earlier. As the number of profiles is less in HALOE observations, it is difficult to believe the results.

We appreciate the reviewer's comment and would like to elaborate on the purpose of this study. The Pinatubo eruption was the largest volcanic eruption in the past 40+years (in terms of SO_2 mass injected into the stratosphere and also regarding its effects on surface and lower stratospheric temperature perturbations). There are very few data sets of middle atmospheric temperature covering the period around or after the eruption. The HALOE data sets is one of these data sets and it has not yet been specifically analyzed to search for potential temperature perturbations associated with the Mt. Pinatubo eruption. For these reasons we consider it worthwhile to do this.
We don't fully understand the reviewer's comment that the number of profiles is less in HALOE observations. The Na-lidar temperature observations analyzed by She et al., for example, relied on 4 and 5 nights of measurements during the springs of 1990 and 1991. After May 1991 the number of measurements increased to 4 to 5 nights a month. We would also like to point out that the OH temperature observations carried out at Wuppertal also show an anomalous positive temperature enhancement in the months after the Pinatubo eruption. This strengthens the need for further studies on the impact of the Pinatubo eruption on the mesosphere, such as is provided by our study.

As the eruption occurred much earlier before the HALOE observations start, the state of the mesosphere prior to the eruption and the evolution and decay of the temperature perturbations could not be captured. The authors may use TIMED SABER or similar temperature data sets for any recent major volcanic eruptions to further strengthen the result.

We agree that an investigation of recent major eruptions with the SABER data would be generally insightful, but (almost) all of the eruptions that occurred during the TIMED-SABER time period were associated with SO_2 injections into the stratosphere that were at least a factor of 10 smaller than for the Pinatubo eruption. None of these eruptions produced such an obvious response in surface temperature or lower stratospheric temperature and we believe that the identification of a potential volcanic signature in middle atmospheric temperatures will be very challenging for these eruptions if not impossible. We have chosen Pinatubo, because it led to a relatively strong thermal perturbation of the lower tropical stratosphere.

Also, the authors need to explan how the volcanic eruption can cause warming in the mesosphere.

Thank you for this comment. We added a description of a dynamical mechanism that can explain the mesopause warming as a consequence of the lower stratospheric and low latitude diabatic heating by the Pinatubo aerosol layer. Please note that we have first simulation results with the upper atmosphere version of the ICON model that are consistent with this mechanism. It involves an anomalous warming of the tropical lower stratosphere (by the volcanic aerosols), hence an increase in the meridional temperature gradient; this in turn affects the zonal wind because of the thermal wind relation; a change in zonal winds leads to a change in the filtering of gravity waves and in consequence affects the wave-driven residual circulation in the upper mesosphere. At last, a temperature anomaly is caused in the mesopause region by a change in adiabatic cooling/heating. We added a description of the mechanism to the discussion section.

We would like to thank the referee again for taking the time to review our manuscript.