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Interactive Comment

Interactive comment on "The HNO_3 forming branch of the HO_2 +NO$reaction : pre - industrial - to - present trends in atmospheric species and radiative forcings" by O. A. Svdeet al.$

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We appreciate this helpful comment. The H2O effect is clearly interesting, and should be tested in global models, but only after it has been measured for the temperature and pressure range relevant to the troposphere and lower stratosphere. At the current stage, according to the group who actually performed the measurements, the parameterisation is only valid for conditions near the Earth's surface (see short comment SC C5228) we therefore leave the H2O effect for later modelling studies.

Our focus is mainly on trends since pre-industrial times and radiative forcing. However, we have revised our manuscript to include the 2009 reference and some discussion on

the H2O effect.

The figures shown in this short comment suggests that NOx is reduced over a larger vertical extent. The conversion of NOx to HNO3 will therefore increase the amount of HNO3 available for washout.

This topic is also covered in the reply to reviewer 2.

Interactive comment on Atmos. Chem. Phys. Discuss., 11, 14801, 2011.