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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Gravity Waves excited during a Minor Sudden Stratospheric Warming" *by* Andreas Dörnbrack et al.

Anonymous Referee #1

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The paper presents strong observational evidence for inertia-gravity wave generation during an Arctic winter minor stratospheric sudden warming. By performing a detailed analysis of both an exceptionally deep radiosonde sounding over Northern Scandinavia and ECMWF analysis/forecast, the study highlights the role of internal stratospheric dynamics as a source of gravity wave generation. The novel aspect of the paper is illustration that spontaneous generation of inertia-gravity waves can occur from balanced dynamics in the stratosphere. Spontaneous emission from deformation of stratospheric polar vortex has thus far received little attention, as most spontaneous gravity wave emission studies have focused on jet exit regions and surface fronts in the troposphere. I find the paper to be very well written and motivated and therefore highly recommend it for publication in its present form.

Interactive comment on Atmos. Chem. Phys. Discuss., https://doi.org/10.5194/acp-2018-228, 2018.