

Interactive comment on “Satellite observations of middle atmosphere gravity wave activity and dissipation during recent stratospheric warmings” by Manfred Ern et al.

Anonymous Referee #2

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Review: Satellite observations of middle atmosphere gravity wave activity and dissipation during recent stratospheric warmings, by Ern et al., 2016.

Authors used SABER, HIRDLS, ERA-Interim, and MLS to study gravity wave change during stratospheric sudden warmings (SSWs). This work calculated absolute momentum fluxes and further potential drag that has not yet been intensively studied before. Since it has been difficult to obtain gravity wave drag information globally, this work will provide very interesting results to our community. Authors applied very careful analysis on longitudinal variations of winds, amplitudes, momentum fluxes of gravity waves. Comparisons of gravity waves during two different types of SSWs are interesting. Therefore, I believe that this work is ready for publication after minor revision.

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Comments: (1) page 12, lines 28-31. I am confused on these sentences. In this sentences, are you saying that because wind speeds are not strong, so gravity wave sources are probably important. Would you explain a bit more on this? Are you thinking about tropospheric sources? Or jet-related sources? (2) Page 27, lines 20-25. It is interesting. Do you see other anomalies in winds during other SSW events?

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