

Interactive comment on “Impact of January 2005 solar proton events on chlorine species” by A. Damiani et al.

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I think this is a really nice paper. It is an important step improving our understanding of chlorine disturbances after solar particle events.

There are only a few minor comments I would like to make:

a) As far as I understand, all model results shown are convoluted with the averaging kernels of MLS and MIPAS, respectively. When it comes to the satellite/model comparison this is of course reasonable. But I think it would also be interesting to see the raw model output, maybe for one selected case in order to get an impression of what the AKs do to the "real" atmosphere? On the other hand, if the effect of the AKs is small, this could maybe simply be mentioned in the text?

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b) Page 1937, Line 18: Rohen et al. (2005) report on O₃ measurements, not on "other chemical components" as implied in the text.

c) Page 1956, Line 20: The finding that there is no need to include any further ion chemistry but that HO_x production does a good job to reproduce the observed mesospheric HCl depletion here is an important result (at least it appears to me). If I may, I would suggest to mention this in the conclusions again or event the abstract.

– And finally, a question: HOCl from MLS is shown down to 1hPa. I do not claim that these values are "wrong" and apparently there is something going on during the SPE, but the recommended pressure range is 10-2.2hPa only. Is there any filter criterium applied to the MLS data for $p < 2.2\text{hPa}$?

Interactive comment on Atmos. Chem. Phys. Discuss., 12, 1935, 2012.

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