

Interactive comment on “Impact of tropospheric nitrogen dioxide on the regional radiation budget” by A. P. Vasilkov et al.

Anonymous Referee #2

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The paper discussed computed global and local atmospheric heating from tropospheric NO₂ using satellite data and model calculations. Several aspects related to uncertainties in the retrieval and heating calculation are discussed and quantified. I find the paper well organized and easy to read.

Some specific comments: 1. Abstract: It would help the reader if the abstracts contains more quantitative information in the NAH and its uncertainty. Now it mostly states what is studied in the paper. 2. Section 4.2.1: It is not clear how the modelled NO₂ data is constrained by the NO₂ column data from OMI. Does it only affect the data at 13:30, or the whole diurnal cycle. 3. It is not clear how relevant the findings are. The authors state that NO₂ absorption is currently not included in most GCM calculations. Is it possible to give the reader an idea how GCN results will alter when this absorption is

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taken into account?

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