

# ***Interactive comment on “iFit: An intensity-based retrieval for SO<sub>2</sub> and BrO from scattered sunlight ultraviolet volcanic plume absorption spectra” by M. Burton et al.***

**M. Burton et al.**

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Author Comment to review AMT-2015-380-RC2

We appreciate the reviewer's overall positive assessment of our manuscript. Through addressing the points the reviewer has raised we feel the manuscript has been significantly improved. The main difference in the revised manuscript is that we emphasise the contribution of this paper as offering a solution to the reference spectrum issue, with the advantages of the intensity fit somewhat de-emphasised.

Line 83: Agreed, this point has been deprecated

Line 99: Thanks, changed

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Line 119: Thanks, changed

Line 151: Changed, but highlighted that volcanic SO<sub>2</sub> signals are often >0.1 OD

Line 160: Corrected

Line 163, 194: Adjusted

Line 204: Adjusted and improved

Line 307-310: Clarified

Line 413, 503: We test the stability of the approach more thoroughly in the revised manuscript

L.509: clarified

L.552, The lower limit sensitivity has been examined for the source of the 25% error and this has been clarified.

L595: Language adjusted

L.599: Deleted

L603: Yes, we have adjusted the whole manuscript to highlight these ideas and diminish the intensity fitting somewhat

L665: Corrected

L657: Deleted

Minor issues: All addressed.

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