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Atmospheric Measurement Techniques Discussions

Interactive comment on "Retrieval of sulphur dioxide from the infrared atmospheric sounding interferometer (IASI)" *by* L. Clarisse et al.

Anonymous Referee #2

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In this work a novel algorithm for the volcanic SO2 retrieval above 500hPa using IASI measurements is described. The most important and original results of this paper is the possibility to retrieve total columnar abundances ranges over 4 orders of magnitude (from 0.5 to 5000 DU) with an extremely low theoretical uncertainty (<5 %) and a near real time applicability. A sensitivity analysis has been also carried out to estimate the retrieval errors due to the uncertainties of measurements errors, volcanic cloud altitude and plume aerosols (ash and ice).

The analysis seems methodologically correct and the results clearly presented.

I recommend the publication after minor revisions and corrections outlined below:

Page 7250, line 18: what does it mean "as a percentage of maximum"?

Page 7253, line 18: why the 5 km retrieval has not been cited?

Page 7253, lines 21-22: clarify the sentence ". . .we find that the values further increase after the 9th to about 1.7 Tg on the 12th".

Page 7268, Figure 5: - avoid the overlapping between the upper left plates;

- check the multiplication factor for the y-axis of all plates (10ˆ2);

- use the same limits (max and min) for the relative errors plates color ramp.

Page 7272, Figure 9: add the units on color ramp.

Page 7275, Figure 12: add date and time for the different images.

Interactive comment on Atmos. Meas. Tech. Discuss., 4, 7241, 2011.