**Atmospheric
Measurement
Techniques
Discussions**

Interactive
Comment

Interactive comment on "Simulation of SEVIRI infrared channels: a case study from the Eyjafjallajökull April/May 2010 eruption" *by* A. Kylling et al.

Anonymous Referee #1

Received and published: 3 December 2012

General comments:

The paper presents an interesting study on the simulation of volcanic ash satellite imagery using a 3D radiative transfer model(RTM). The study follows recent work by Millington et al. (2012), but using a method that involves more detail e.g. on the size distribution and the use of the highly detailed RTM. Thus it provides a nice extension to the earlier work.

Specific comments:

1. Section 3: It would be interesting to know how time consuming the approach is - is

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it a method that could be considered for operational use in a VAAC or is it a research tool due to the length of time it takes to run?

2. line 25, p. 7788: Was the temperature field 3D from ECMWF analyses or hortizontally constant from Anderson et al.? You write both sources. Are these two bits of temperature information used for different things. I got a little confused by this paragraph, so please could you clarify.

3. line 5, p. 7789: Why was a constant waper vapour profile used for the whole domain rather than taken from the ECMWF analyses? Doesn't this have a large effect on the simulated signal?

4. line 10, p. 7792: Please can you explain why voxels are identified as ash, ice or water by their densities? Aren't the particle types known in the simulation? What density is this - not the indivdual particle density?

Technical comments:

1. line 2, p 7786: "UK Met. Office" should be written "UK Met Office".

2. line 17, p. 7790: "August" should be "April".

3. line 21, p. 7790: "left panel of Fig. 4" should be "top panel of Fig. 4"

4. line 6, p. 7791: "right panel of Fig. 4" should be "bottom panel of Fig. 4"

5. line 26, p. 7791: "left and right panels" should be "top and bottom panels"

6. line 26, p. 7792: "left and right panels" should be "top and bottom panels".

Interactive comment on Atmos. Meas. Tech. Discuss., 5, 7783, 2012.