

Interactive comment on “Extension of the WRF-Chem volcanic emission pre-processor to integrate complex source terms and evaluation for different emission scenarios of the Grimsvötn 2011 eruption” by Marcus Hirtl et al.

Anonymous Referee #1

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This is a nice paper on the difficulties to define emission scenarios for volcano eruptions for atmospheric transport modelling explored for the Grimsvötn eruption in 2011. By comparisons with different measurements the merits and deficiencies of three different approaches are clearly demonstrated.

The paper is well written and in good disposition. The paper demonstrates the issues with modelling of volcano eruptions, from forecast into unknown future, feeding in measured plume heights, to hind-cast with assimilated source estimates. The Grimsvötn case also pose the issue of vertical emission split of SO₂ and ash.

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Figures are appropriate and descriptive. Reference to Carboni et al. 2013 is missing while Carboni et al. 2016 is there, otherwise the references are appropriate.

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