

Interactive comment on “A global catalogue of large SO₂ sources and emissions derived from the Ozone Monitoring Instrument” by Vitali E. Fioletov et al.

Anonymous Referee #2

Received and published: 25 August 2016

Review of the ACPD paper by Fioletov et al., 2016

The authors present a very impressive global catalogue of point sources of SO₂ with additional annual emission estimates, based on a well-documented methodology that uses OMI columnar SO₂ data. Concerning the methodology the authors present additionally in this paper uncertainty estimates relevant to the choice of the satellite algorithm, the AMF calculation, the estimation of mass and the fitting procedures. They conclude that their methodology is sensitive to sources stronger than 30kt/yr with an overall uncertainty close to 50%. The paper should be accepted for publication almost as it is, considering the correction of few minor typos and some comments below:

Page 3, line 26. The authors use the period 2005-2007 for the identification of the

C1

sources. What about sources that could appear after this period? Can this be excluded? Please comment on that.

Page 4, line 6. Check the equation. There is no exponent.

Section 2. After reading section 2 the reader is confused concerning the differences in AMF estimations between the two algorithms and their consistency. Please provide some more information for the BIRA algorithm on that.

Section 7. In this section it could be good to provide a comment on the uncertainty of the bottom-up inventories and compare this to the uncertainty of the retrieved emissions.

Interactive comment on Atmos. Chem. Phys. Discuss., doi:10.5194/acp-2016-417, 2016.