

Interactive comment on “OMI Satellite Observations of decadal changes in Ground-Level Sulfur Dioxide over North America” by Shailesh K. Kharol et al.

Anonymous Referee #2

Received and published: 13 January 2017

In this paper, Shailesh K. Kharol et al. presented an estimation of ground-level sulfur dioxide concentrations from the Ozone Monitoring Instrument (OMI) using SO₂ profiles from the Global Environmental Multi-scale – Modelling Air quality and CHemistry (GEM-MACH) model over North America for the period of 2005–2015. Also comparisons and trend analysis using OMI, GEM-MACH and in-situ SO₂ observations are presented.

General observations: The paper is quite interesting but need more details. The authors should highlight their work and the novelty of this paper. SO₂ from space and comparisons with ground or model observations is not a new subject, I suggest a more detailed presentation of Section 2 Data sets & methodology. The authors should show

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that this paper is more than just a database manipulation.

1 Introduction

In this section the authors should connect their work with other studies, e.g. China, etc. Also, in this section, the authors should highlight the novelty of their work.

2 Data sets & methodology

In this section they should introduce more details.

3 Results & Discussion

page 5/L1:5 you should give some coordinates and to specify if Flin Flon, Snow Lake, Sudbury, Thompson, Montreal are power plants (?)

page 5/L5:10 where is apparent the closure of Flin Flon copper smelter?

Other observations: I suggest to introduce a study case using one (or more) power plants for the SO₂ sources mentioned in this work.

Interactive comment on Atmos. Chem. Phys. Discuss., doi:10.5194/acp-2016-1070, 2016.

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