Atmos. Chem. Phys. Discuss.,
doi:10.5194/acp-2016-1070-RC2, 2017

Atmospheric Chemistry and Physics Discussions

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 analisys 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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Discussion paper

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.