Atmos. Chem. Phys. Discuss., 15, C4737–C4739, 2015
www.atmos-chem-phys-discuss.net/15/C4737/2015/


Atmospheric Chemistry and Physics Discussions



# *Interactive comment on* "LSA SAF Meteosat FRP Products: Part 2 – Evaluation and demonstration of use in the Copernicus Atmosphere Monitoring Service (CAMS)" *by* G. Roberts et al.

**Anonymous Referee #1**

Received and published: 10 July 2015

The article of Roberts et al. (2015) presents the performances of the Meteosat SEVIRI FRP products available from the LSA SAF, in a comparative analysis with MODIS and other SEVIRI based active fire products. It also shows the potential of these geostationary observations of biomass burning in parametrize wildfire emissions at high temporal resolution. The study shows a very interesting performances of the LSA SAF FRP products in exploiting the unparalleled MSG-SEVIRI high temporal resolution to characterize fire activity over the geographic area observed by this sensor. And it definitely fills a need for actual and potential users of geostationary active fire products to better understand the limits and potentialities of these data. Furthermore it gives a



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nice overview of the performances of currently available geostationary fire characterization products. I recommend publication in ACP. Below follows my contribution to the discussion.

1) In section 3.2.1 the methodology for the comparison between FRP-PIXEL product and other geostationary fire products is described. For FIR and WFABBA products, the less conservative classes of fire detections are excluded by the analysis. (For WFABBA, only filtered fire detections have been used in the analysis. This product has also different classes of outputs (Processed, Saturated, Cloud Contaminated, High Probability, Medium Probability, Low Probability). Have all of them been included in the analysis?). This comparison analysis shows that in general the FRP-PIXEL product generates a much higher number of fires detections with respect to the other geostationary fire products. In the light of this, do the authors think that it would be of interest to include in this comparative analysis also the less conservative detections for the other satellite fire products? If not related to the exclusion of the less probable classes of detection, what are, according to the authors, the main reasons of the differences observed with the other active fire products derived from the same Meteosat SEVIRI observations.

2) In section 5.2.2 and in Table 4 it is not clear which enhancement factor has been used to adjust the bottom-up aerosol emission estimates to those observed in top-down inventories.

3) In section 5.2.2 (pg.15939 line 9) the choice of releasing the smoke emissions in the lowest atmospheric level has not been discussed. Given the magnitude of the modelled fires, how much the authors think, the missing information of the plume penetration above the Planetary Boundary Layer, could have impacted the simulation of the smoke plume evolution?

4) From section 5.3.1 SEVIRI saturation seems to be a major limitation of the FRP-PIXEL product in describing the 2007 Greek fire episodes. Do the authors think that



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including MODIS-FRP derived emissions in the description of the selected fire episode could help to understand the impact that SEVIRI saturation has in underestimating the magnitude of the studied fire emissions?

Minor comment: Page 15921, Line 11. "... further from the Meteosat sub-satellite point (SSP) ..."

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Interactive comment on Atmos. Chem. Phys. Discuss., 15, 15909, 2015.