

Interactive comment on “Meteosat SEVIRI Fire Radiative Power (FRP) products from the Land Surface Analysis Satellite Applications Facility (LSA SAF) – Part 1: Algorithms, product contents and analysis” by M. J. Wooster et al.

Anonymous Referee #1

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General Comments

The authors describe the enhanced geostationary Fire Thermal Anomaly (FTA) algorithm for detecting active fire pixels in SEVIRI data, including details of the methods used to produce atmospherically corrected FRP and per-pixel uncertainties. Using both simulated and real SEVIRI data, the authors go on to describe some important sensor and data pre-processing characteristics that influence fire detection, most

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notably artefacts resulting from the digital filtering and geometric resampling used to generate low level SEVIRI data.

The subject matter is appropriate for ACP and will be of interest to readers. The manuscript is complete and very well written, and in my opinion requires only a handful of minor changes prior to final publication.

Technical Corrections

Page 15835, line 2 - “3 km spatial resolution”. Here and in the abstract (page 15833, line 18), the text gives the impression that SEVIRI pixels are 3-km in size. However, as noted later in the manuscript, the combination of the 4.8-km SEVIRI IFOV and 3-km ground sampling distance result in “a final image resolution of around 6 km” (page 15838). Please make the text consistent.

Page 15837, line 16 - “whist” → “whilst”.

Page 15837, line 24 - Delete the word “currently” since it is redundant after saying “At the time of writing...”

Page 15838, line 18 - “SEVIRIs scan mirror” → “SEVIRI’s scan mirror” or “the SEVIRI scan mirror”. Please also fix in line 28.

Page 15838, line 23 - Please correct garbled pixel dimensions (presumably “6 km × 6 km” was intended).

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Page 15840, line 24 - "Kelvin" → "kelvins".

Page 15852, Eq. (18) - Strictly speaking, this equation is incorrect since, as written, it indicates that the partial derivative is to be taken with respect to the index k . For clarity and correctness it would be better to write the partial derivative as $\frac{\partial \text{FRP}}{\partial V_k}$ and say that V_k represents the variables of Eq. (16).

Page 15853, Eq. (20) - It's not obvious that the error term σ_S can be combined in this way since saturation would presumably contribute a systematic rather than random error. Please clarify. I would also add an extra sentence or two in section 5.2.1 that justifies using the median absolute deviation about the median (σ_S) as if it was a standard deviation in Eq. (20).

Page 15861, Eq. (23) - Comment above for Eq. (18) also applies here.

Section 7 (pages 15862 - 15864) - Please consider eliminating this section (including Table 4) since it deals with details of file access, naming, and formats, which are topics that are better relegated to online documentation, the ATBD, or a README file.

Interactive comment on Atmos. Chem. Phys. Discuss., 15, 15831, 2015.