

## ***Interactive comment on “Development of a new gas flaring emission data set 1 for southern West Africa” by Konrad Deetz and Bernhard Vogel***

**C. Elvidge (Referee)**

chris.elvidge@noaa.gov

Received and published: 3 August 2016

There are several issues that would require some rework prior to publication:

1) The VIIRS Night Fire (VNF) "flares only" dataset is not suitable for scientific applications. It is generated by stripping out VNF detections with either no temperature or temperatures under 1400K. This eliminates most biomass burning and ambiguous detections. The purpose of this is to provide a quick daily overview of global gas flaring activity. There are many times when a flare was detected in a single spectral band (usually M10 at 1.6  $\mu\text{m}$ ), in which case the Planck curve cannot be fit and a temperature cannot be calculated. These detections have been lost in the dataset used by the authors. In addition, some flares are known to fluctuate in temperature and dip below 1400 K. These low temperature flaring events are also lost in the "flares only"

Printer-friendly version

Discussion paper



daily summaries. To produce a more thorough analysis, the authors should work from the original daily VNF files. At best the "flares-only" version of the data provides a 'quick-and-dirty" depiction of global gas flaring.

2) The authors do not account for variations in cloud cover. This can be done based on the VIIRS Cloud product suite.

3) The text should reference the following paper: Methods for Global Survey of Natural Gas Flaring from Visible Infrared Imaging Radiometer Suite Data (<http://www.mdpi.com/1996-1073/9/1/14>).

4) NOAA has global flaring data spanning 2012-2014 available at: [http://ngdc.noaa.gov/eog/viirs/download\\_global\\_flare.html](http://ngdc.noaa.gov/eog/viirs/download_global_flare.html). There is a csv that contains locations and annual summaries of temperatures and radiant heat output of individual flares, normalized for cloud cover. The flared gas volume estimates are derived from an empirical calibration with CEDIGAZ reported flaring. It would be interesting to compare the NOAA results with those from the methods described in this paper.

5) In the last sentence of the first paragraph, the text references the World Bank for a set of national flared gas volume estimates. The text should make it clear that these estimates were produced by NOAA using DMSP satellite data. There is a new set of estimates derived from VIIRS data at [http://ngdc.noaa.gov/eog/viirs/download\\_global\\_flare.html](http://ngdc.noaa.gov/eog/viirs/download_global_flare.html).

---

Interactive comment on Geosci. Model Dev. Discuss., doi:10.5194/gmd-2016-110, 2016.

Printer-friendly version

Discussion paper

