LONG-TERM MONITORING OF THE SUOMI NPP ACTIVE FIRE PRODUCT AND TRANSITIONING TO THE JPSS-1 SATELLITE

I. Csiszar [a, *], W. Schroeder [b], L. Giglio [c]

[a] NOAA NESDIS Center for Satellite Applications and Research (STAR), College Park, MD 20740, USA - Ivan.Csiszar@noaa.gov
[b] University of Maryland, Department of Geographical Sciences, College Park, MD, USA – Wilfrid.Schroeder@noaa.gov
[c] University of Maryland, Department of Geographical Sciences, College Park, MD, USA – lgiglio@umd.edu

THEME: Forests, Biodiversity and Terrestrial Ecosystems; Wildfires Special Session

KEY WORDS: satellite, fire detection, monitoring, validation

ABSTRACT:

The active fire product from the Suomi National Polar-orbiting Partnership (SNPP) Visible Infrared Imaging Radiometer Suite (VIIRS) has reached NOAA operational status by late 2014, largely due to the incremental improvements in the quality and quality flagging of the input Sensor Data Record (SDR) data. Critical components in the lifecycle of this product are long-term monitoring and reactive maintenance to ensure the continuing provision of data without any degradation of product quality. A prototype long-term monitoring system has been developed to identify product anomalies and assist the identification or their causes. Of particular concern is the occurrence of spurious detections related to input data anomalies. Elements of the system have been tested during evaluation efforts towards increasing maturity stages of the product, which showed a reduction of the frequency of spurious data. NOAA and NASA have also jointly undertaken the process of implementing a new VIIRS active fire product to provide not only the locations of pixels with fire detection, but also a spatially explicit fire mask and fire radiative power. This work is done in close collaboration between the NOAA and NASA VIIRS Land Science Teams to ensure consistency between the algorithms and data products generated within NOAA's real-time operational framework and NASA's science and application activities. Algorithm tuning and product validation relies on independent observations from aerial and spaceborne platforms, combined with the verification of theoretical simulations to establish detection probabilities for a set of fire properties and environmental conditions.

---

* Corresponding author. This is useful to know for communication with the appropriate person in cases with more than one author.