

Recent implementation of processing packages for Suomi/NPP Instruments at CPTEC/INPE

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CPTEC/INPE implemented operationally the available packages to process S-NPP Instruments: RT-STPS and IPOPP. CSPP has being also tested but not implemented operationally. This works aims to present the potential use of VIIRS-NPP direct broadcast product processed by IPOPP.

Motivation

Centre for Weather Forecast and Climate Studies of the National Institute for Space Research (CPTEC/INPE) is the Brazilian direct broadcast user of environmental and meteorological satellites (TERRA, AQUA, NOAA, GOES). Recently, DGI/ INPE start receiving (October 2013) continuously Suomi/NPP data from its local antennas. Since then, RT-STPS, IPOPP and CSPP processing packages has being tested at CPTEC/INPE. IPOPP has being also used for processing data from Aqua and Terra satellites in order to generate satellite and environmental data records.

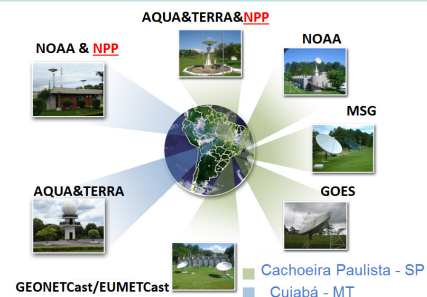
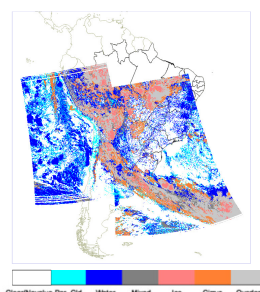


Fig 1. Ground Reception Antennas Systems operated by Image Generation Division (DGI/OBT/INPE).

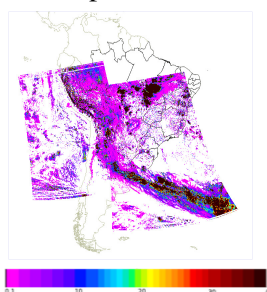
PRODUCTS SUOMI/ NPP GENERATED WITH IPOPP OVER SOUTH AMERICA

Environmental data record

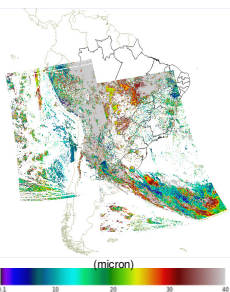
Cloud Phase



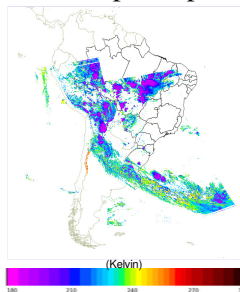
Cld. Opt. Thickness



Effect. Particle Size

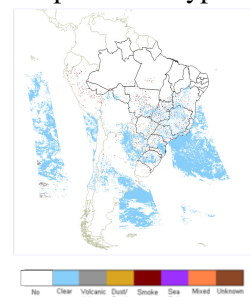


Cld. Top Temp.

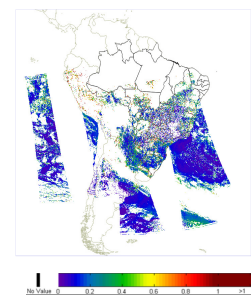


- IPOPP v2.1: Processing time ~ 2h 30min. (~50 min only SDR)
- Composition of two orbits on 06/02/2014
 16:58 UTC (Western)
 18:38 UTC (Eastern)

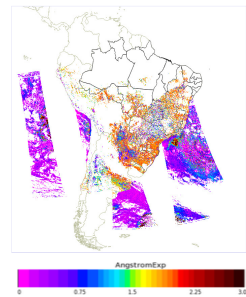
Susp. Matter Type



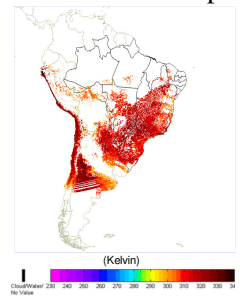
AOT



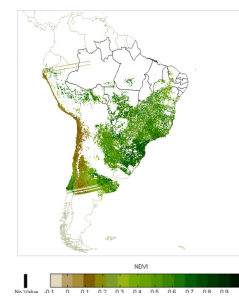
Aer. Particle Size



Land Surf. Temp.

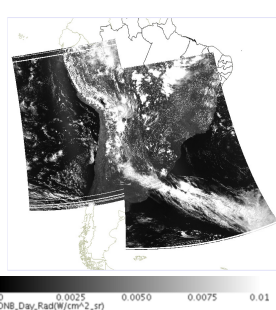


NDVI



Satellite data record

VIIRS Day/Night SDR



True Color

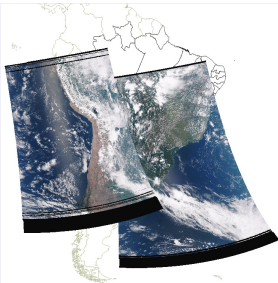


Table 1 - Estimated size volume for NPP compressed data generated at CPTEC/INPE by IPOPP v2.1 (gzip command linux).

Data Set input/output NPP	overpass GB	2 overpass/day (2 antennas) GB	GB/Monthly	TB/Year
Raw, RDR, SDR, EDR	13.7	54.8	1644	19.7
Raw, SDR, EDR	12.8	51.2	1536	18.4
SDR, EDR	12.3	49.2	1476	17.7
SDR	10.0	40.0	1200	14.4

Remarks: The IPOPP v2.2 is running operationally and real-time at CPTEC/INPE, but it is a validation stage. Given the variety of environmental and meteorological S-NPP derived products, they will be available to local user community for their own evaluation and test, and CPTEC/INPE aims to be work together with some of the user in order to make the best application and dissemination of the SNPP products in South America.

Acknowledgements: NPP process packages teams (IPOPP, RT-STPS, CSPP, AAPP), CAPES-PROEX/PGMET, Project Universal CNPq 487255/ 2012-7.