

**Abstract for Paper Presented at the  
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Category of the Paper: NOAA Satellite Data Operations

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Title: Characterization of the Data Volume Generated by the S-NPP Mission to Support Decisions Regarding Data Downlink Resource Management

Abstract:

The volume and rate of the data from the six S-NPP data sources has been analyzed and characterized for the time period April, 2012 through December, 2015. This characterization supports S-NPP and JPSS Program decisions on satellite data downlink resource management as well as concepts of operations and requirements for future missions. Five of the six S-NPP data sources generate an effectively constant data stream at a rate of 3.2 Mbps with CrIS operating in Full Spectral Resolution mode. Because VIIRS onboard data compression varies with scene entropy, special attention was provided to VIIRS data generation. Considerations of seasonal variability, effects of daytime and nighttime operations, geolocation, and waveband-unique qualities are included. The average S-NPP data generation rate during daytime operations is 12.6 Mbps, but it can peak closer to 16.7 Mbps. At night, the average S-NPP data generation rate falls to 7.2 Mbps. Understanding the variability of the data generation supports optimal and low risk operational decisions on data downlink operations.

Additional Resources are available upon email request sent to [LauraEllen.Dafoe@JeTSl.com](mailto:LauraEllen.Dafoe@JeTSl.com).

Executive Summary:

16 Pages

Includes All Six SNPP Data Sources

Includes the Data Rate Tables for Daytime Peak, Daytime Expected, Nighttime Expected

Technical Manual:

144 Pages

Specifically details VIIRS data generation