

# Differences between the NRT and Standard “n-day” products

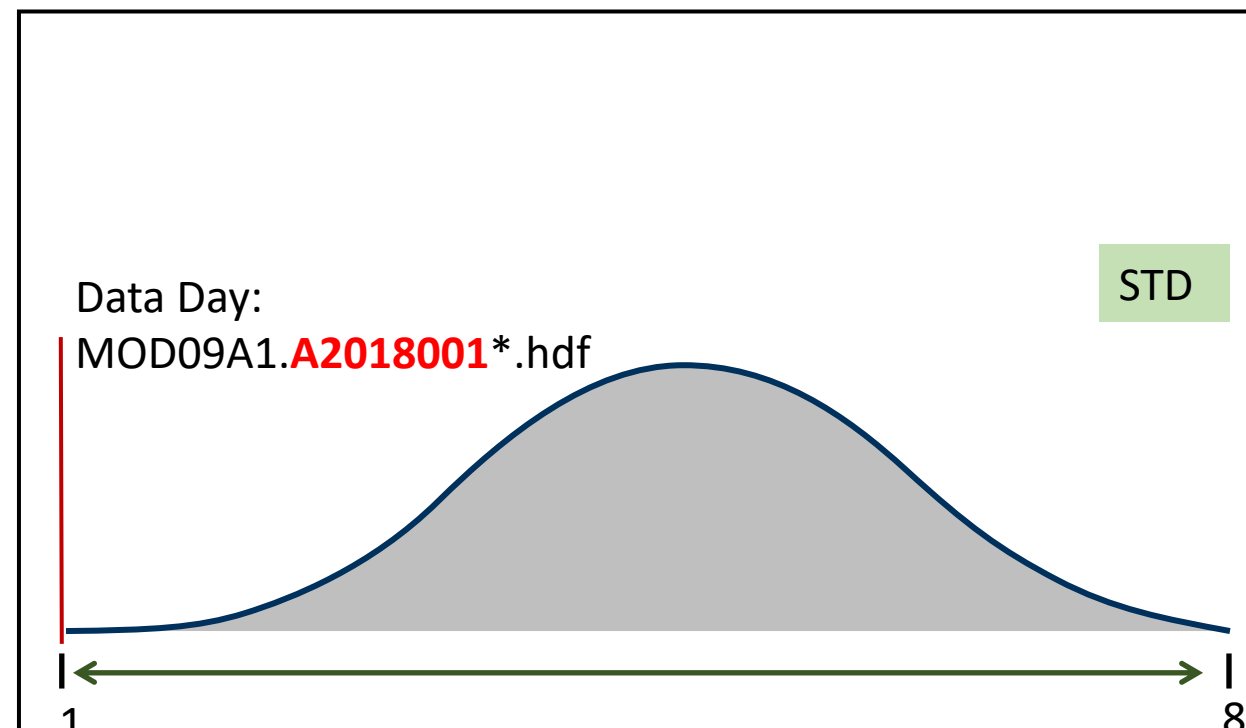
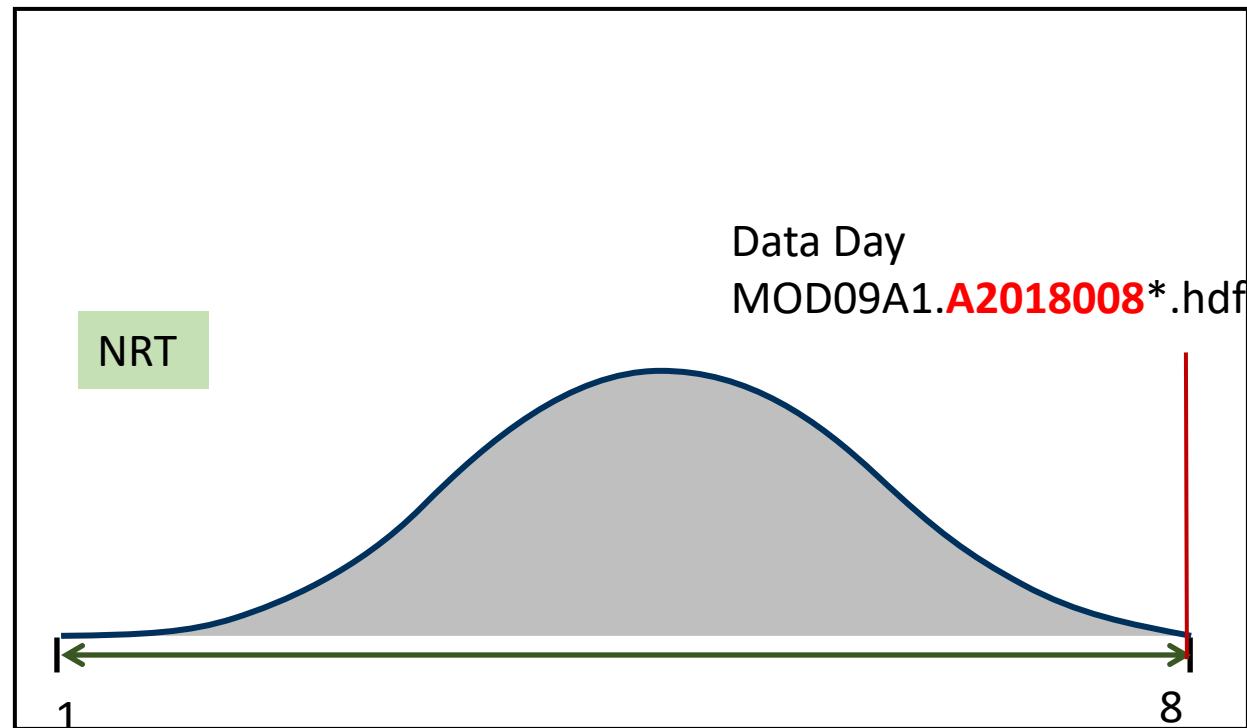
The NASA MODIS and VIIRS “n-day”, L3 land products produced by MODAPS and LandSIPS follow a slightly different processing paradigm in the NRT and Standard (STD) processing streams.

**NRT** - Following the requirements of quick turn around and minimum latency in the NRT streams, most n-day NRT products like MOD13A1N/Q1N, MxD09A1N, MCD43A1N/A2N/A2N are produced **every day** based on a rolling prior “(n-1)-day” input requirements, with “n<sup>th</sup>” day being the current day being processed. Hence, the product for day “t” will use inputs from day ***t-(n-1) to t***. Thus the NRT stream follows an essentially “look back” approach and data day given in the product file name represents the current day or the last day (n<sup>th</sup> day) of processing. As an example, the 8-day MOD09A1N product from day 8, will have inputs from day 8 and 7 days prior and the filename will be something like:

**MOD09A1N.2018008.006\*.hdf**

**STD** - Contrary to this, in the STD processing streams, the products are generated based on fixed and pre-defined “n-day” intervals and follow a “look-ahead” approach, where a n-day product is produced, with inputs from day  $t$  to  $t+(n-1)$ , with “t” being the start of the n-day period and “t+(n-1)” being the end of the n-day period. As an example, the 8-day MODIS Terra LSR product, MOD09A1, from the 8-day period starting on day 001, will have inputs from day 001 – 008 and will have the starting day “001” indicated as part of the filename, like: **MOD09A1.A2018001.006.\*.hdf**.

In addition, contrary to the NRT products that are produced daily, the STD n-day products are only produced at every “n-day” intervals, which makes comparison of “n-day” products from NRT and STD tricky. For example, in order to compare the MOD09A1N from NRT for day 2018008, one has to use the STD MOD09A1 from 2018001, ensuring that both products cover the identical time



This general difference between the NRT and STD n-day products, becomes slightly different in case of the MODIS BRDF Albedo product suite (MCD43\*).

- NRT BRDF process estimates BRDF for the current data day at the leading edge of the 16-day period (the last day of the retrieval period).
- STD BRDF process estimates the BRDF, Albedo, and NBAR for the 9th day in the 16-day period. Hence, the operational MCD43 processing will not produce a product for the same date of interest until at least 8 days after the NRT retrieval has occurred.
- The weighting scheme for the different days are also slightly different between NRT and STD. In NRT, greater weightage is given to immediately prior days with the weights dropping linearly with more distant days. In STD, equal weights are given to days on both sides of the data days with the weights dropping in proportion to the distance of the days on either side from the data day.

