Dataminer: A software system to search, visualize, and subset distributed swath and gridded data products

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NASA's Physical Oceanographic Distributed Active Archive Center (PO.DAAC) is actively evolving its tools and services to facilitate the process of searching for, evaluating, and extracting parameters from its continuously growing repository of swath-based and gridded ocean data products. Of particular note among those capabilities is Dataminer, a software system initially conceived at Ifremer that provides swath-based (Level 2) and gridded (Level 3) data search functionality based upon a combination of spatial, temporal, and statistical constraints. Complementary imaging and subsetting modules provide quicklook and extraction capabilities for any search result. Dataminer seamlessly operates on data regardless of location by utilizing OPeNDAP. It has been successfully tested with remote data products from the National Snow and Ice Data Center (NSIDC), the National Ocean Data Center (NODC), and Goddard Space Flight Center (GSFC). The current set of available data products includes MODIS and AMSR-E sea surface temperature, MODIS sea ice extent, Quikscat and ASCAT winds, and AIRS CO_2. Each data product has a set of statistical summary values that can be used to focus searches based upon parameter characteristics such as quality, mean value, or minimum/maximum. Scientific researchers can use Dataminer's graphical web interface or a set of corresponding OGC and RESTful web services for automation or larger quantities of data. This presentation will detail Dataminer's functionality for use with scientific data, it's unique capability to improve access to quality data for research, and will discuss the underlying tiling mechanism at the core of the system.