Interactive Multisensor Snow and Ice Mapping System (IMS) Upgrades and Improvements

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ABSTRACT

The U.S. National Ice Center's Interactive Multisensor Snow and Ice Mapping System (IMS) produces daily snow and ice coverage products for the entire Northern Hemisphere. A certified IMS analyst interprets satellite data from multiple platforms, instrument observations, and automated snow/ice detection algorithms to provide a quality-controlled composite of snow and ice coverage, data since last observed (DSLO), and snow depth. Updated analyses are produced twice a day to ensure that the most up to date information is available for use within numerical weather prediction models. Over its 21-year history, there have been numerous updates to improve the accuracy and resolution of IMS products. The latest version of the IMS incorporates new tools and functionality, along with data sources enabling analysts to more quickly and accurately detect and analyze snow and ice.

New data sources the IMS has been successful in incorporating includes environmental observations from the recently launched GOES-16 & 17 satellites, along with Sentinel 1 A/B and NOAA-20. These next generation satellites provide analysts with an unprecedented ability to identify snow and ice in high definition with improved spatial and temporal resolution. The improvements in satellite data coupled with the deployment of new data products within the IMS, such as Arctic imagery composites, a synthetic aperture radar (SAR) ice extent product, and a corrected DSLO algorithm has contributed to a decrease in time it takes to perform an analysis, while also providing increased analysis accuracy. The improved product benefits all IMS users, including the numerical weather prediction community.

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