



HIRS OLR Climate Data Record – Production and Validation Updates

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The outgoing longwave radiation (OLR) at the top of the atmosphere is one of the three components that comprise earth radiation budget. It has also been used very effectively in climate diagnostics/monitoring and fidelity assessment for numerical models because of its sensitivity to the atmospheric and the earth's surface variations. A continuous OLR climate data record of more than three decades long in global coverage has been derived using the radiance observations from the High-resolution Infrared Radiation Sounder (HIRS) onboard the NOAA TIROS-N series and the Eumetsat MetOp-A satellites. Past validations of the HIRS OLR data against the broadband-based OLR products derived from ERBE and CERES scanners/non-scanners observations were shown to have very consistent agreement in terms of accuracy, variability, and stability.

The HIRS OLR climate data record is now an operational product that is being managed and maintained by the NOAA National Climate Data Center (NCDC) and the Cooperative Institute of Climate and Satellites (CICS)/University of Maryland College Park, respectively. The continuing efforts in validation and inter-comparison are the core tasks for the quality control and quality assurance purposes.

In this paper, we will be reviewing the key methodologies for the HIRS OLR CDR production, addressing some known issues, and presenting the latest validation results comparing with the CERES Edition 3 product release.