



## **Global Sea-Surface Temperature Fields from MODIS and VIIRS**

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Sea-Surface temperature (SST) is an Essential Climate Variable; satellite remote sensing offers the only method of generating global fields. As with all measurements, the correct application of satellite-derived SSTs, is successful only if the accuracy of the retrieval is well specified. The accuracy and stability requirements of satellite-derived SST fields for climate research are very stringent and difficult not only to achieve, to also to demonstrate whether the accuracies have been achieved, or not. The accuracies of SSTs derived from MODIS and VIIRS are limited not by the accuracies of the on-orbit measurements, but by the effects of contamination by undetected clouds and aerosols, and by imperfect correction of the effects of the intervening atmosphere. The combination of SST fields from MODIS on Terra, MODIS on Aqua, and VIIRS on S-NPP, is facilitated by the use of consistent algorithms, and by consistent methods to assess errors and uncertainties. In particular, traceability of SI temperature standards for the instruments used in validation of the satellite-derived SSTs, allows the generation of large databases from diverse instruments thereby sampling a wide range of conditions. SI-traceability is established through a series of workshops involving standards from National Metrology Institutes, the most recent of which was held at the National Physical Laboratory in the UK in June 2016. We will present results of recently improved algorithms for cloud screening and atmospheric correction, and developments in the specification of the errors and uncertainties in the retrieved SSTs, and how they can be established with confidence.