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Sea-surface temperature (SST) is an Essential Climate Variable and has importance in controlling many processes in the ocean, atmosphere and in air-see interactions. Since temperature is a base variable of the International System (SI) of units, generating a Climate Data Record (CDR) of SST has significant advantages in being able to combine measurements from multiple sensors on decadal time scales in a physically robust fashion. An unbroken chain of calibration to SI temperature standards for each sensor contributing to the CDR is a prerequisite for creating long time series of measurements. Satellite remote sensing provides a mechanism for generating SST CDRs covering the entire global oceans, and the time series of measurements from several generations and examples of satellite sensors now spans nearly four decades. However, since satellite instruments are never recovered for post-deployment calibration, other approaches must be adopted. We have deployed using ship-board spectro-radiometers with SI-traceable calibration on many of the PNE cruises, and we use their measurements to assess the accuracies of satellite-derived SSTs that can contribute to the generation of a satellite-derived SST CDR.
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