Use of new satellite sea surface temperature observations in OSTIA

Emma Fiedler, Chongyuan Mao, and Simon Good

Met Office, United Kingdom (emma.fiedler@metoffice.gov.uk)

OSTIA is the Met Office's Operational SST (Sea Surface Temperature) and Ice Analysis system, which produces L4 (globally complete, gridded) analyses on a daily basis. The product is made freely available through CMEMS (Copernicus Marine Environment Monitoring Service). Additional satellite SST datasets have been assimilated into the OSTIA analysis operationally from 15 March 2016. These datasets are ACSPO VIIRS L3U from NOAA/NESDIS/STAR and AMSR2 L2P from REMSS (Remote Sensing Systems). This has led to a sizable improvement in the RMS error of the OSTIA analysis compared to independent Argo observations. Test runs assimilating ACSPO VIIRS and REMSS AMSR2 observations separately have indicated that the total improvement is due to the action of both datasets together rather than one or the other. In addition, ACSPO VIIRS replaced MetOp-A AVHRR as the reference satellite dataset used in OSTIA on 6 November 2016. The reference satellite data, in addition to in situ observations, are used for bias correction of the other satellite data types used in the analysis. The change to using VIIRS as a reference has led to notable improvements in regional biases for OSTIA compared to Argo, drifters and other satellite SST datasets, particularly in the high latitudes. Methods will be described and validation results shown in this presentation.