

**An operational analysis of lake surface water temperature**

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Operational analyses of Lake Surface Water Temperature (LSWT) have many potential uses including as boundary conditions in NWP (Numerical Weather Prediction) models. On 24 November 2011, LSWT was included as part of the SST field in the UK Met Office daily Operational Sea Surface Temperature (SST) and Sea Ice Analysis product, OSTIA, for 248 lakes globally. Infra-red satellite observations of lakes and in situ measurements are assimilated using an optimal interpolation (OI) type scheme. The satellite observations are based on retrievals optimised for SST which may introduce inaccuracies into the LSWT analysis but are currently the only near-real-time satellite information available. It is demonstrated using independent data from the ESA ARCLake project at the University of Edinburgh that the LSWT analysis has a global RMS error of 1.31 K and a bias of 0.45 K. It is also shown that the OSTIA LSWT is an improvement over the use of climatology to capture the day-to-day variation in global lake surface temperatures.