

Development of a daily gridded MSLP data set over the North Atlantic region using I-COADS

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One of the aims of the EC-funded EMULATE (European and North Atlantic daily to MULTidecadal climATE variability) project is to define characteristic atmospheric circulation patterns over the European and North Atlantic region. Previous studies of this nature have been limited by a lack of gridded mean sea level pressure (MSLP) products of sufficient length. However, the recently released International Comprehensive Ocean-Atmosphere Data Set (I-COADS), with several million new observations, has made projects such as EMULATE feasible.

We discuss the quality control and gridding strategy employed with the I-COADS data to produce daily gridded MSLP fields over the North Atlantic region from 1850 for EMULATE. Techniques previously employed at the Hadley Centre have been re-examined and modified as part of this work. As well as describing these techniques, we present initial efforts to attach uncertainty estimates to each grid box value. A number of important issues pertinent to the I-COADS data, such as previously undetected duplicates and the use of Paris longitude, will also be raised. The overall aim is to highlight the potential benefits of using historical marine data in climatic studies, such as EMULATE.