C20C - Climate of the 20th Century. The development of the new Hadley Centre Sea Ice and Sea-surface temperature data set, HadISST2

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The Met Office Hadley Centre Sea-ice concentration and sea-surface temperature data set HadISST1, has been used in many hundreds of peer reviewed publications, providing boundary forcing to atmosphere-only simulations of climate variability and change, amongst other things. HadISST2 aims to build on the successful elements of HadISST1, while making improvements in a number of key areas. 1 Improvements to source data sets. HadISST2 is based on version 2.5 of the International Comprehensive Ocean Atmosphere Data Set (ICOADS) which contains several million more observations than the in situ data set on which HadISST1 was based. Improved AVHRR data from the Pathfinder data set are being used and SST retrievals from the ATSR series of instruments. Sea ice data sources have also been updated and extended. 2 Bias corrections: comprehensive homogeneity adjustments are applied to the in situ SST, AVHRR SST and sea ice retrievals to correct for known biases in the data. 3 Improved reconstruction techniques allow us to make use of every single observation to inform the estimation of the covariances and reconstruction. The new reconstruction technique also means that we can make a reconstruction of the data at a resolution of 1 degree all the way back to 1850. 4 Increased resolution: the base SST climatology is now 0.25x0.25 degrees and daily resolution allowing improved representation of features such as the Gulf Stream. 5 Uncertainties: HadISST2 will be presented as a set of realisations that explore the uncertainty range. Each realisation will have realistic spatial variability that is consistent with the known covariance structure of SST, the available observations and their uncertainties. This poster will illustrate these aspects of the new HadISST2, highlighting the benefits to potential users.