



Homogenization of daily Chinese surface air temperatures: From CHHT 1.0 to its updated version

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One of the primary goals of Chinese Homogenized Historical temperature (CHHT) version. 1.0, released in December 2006, was to build a set of homogenized observational climatic datasets. The CHHT1.0 Dataset (1951–2004) consists of monthly and daily surface observations from all national stations in mainland China. CHHT 1.0 includes mean, maximum, and minimum temperature data; assessments of data quality; and gridded versions of the three temperature variables. In the recent updating version, we homogenizes time series of daily maximum and minimum temperatures recorded at 825 stations in China over the period from 1951 to 2010, using both metadata and the penalized maximum t test with the first order autocorrelation being accounted for to detect changepoints, and using the quantile-matching algorithm to adjust the data time series to diminish non-climatic changes. Station relocation was found to be the main cause for non-climatic changes, followed by station automation.