

HadISDH Update Document

Kate Willett (MOHC), 22nd March 2018

General Notes:

The HadISDH.v4.0.0.2017f contains all 12 months of 2017. It is a major new version (X element + 1) because it is now using the 1981-2010 period as its climatological reference period both to make it more consistent with other monitoring products and to maximise station coverage now that it uses the larger station database of HadISD2. Additionally, there has been a small methodological change but this is rolled into the major increment of X from 3 to 4 rather than also incrementing the Y element. Stations with large adjustments made during homogenisation are removed based on thresholds for q (>3g/kg), RH (>15%rh), T (>5degC) and Td (>5degC) rather than just T and Td. This results in 54 stations being removed as opposed to 29 last year. All other processing steps for HadISDH remain identical. The new version of HadISD2 (2.0.2.2017p) has pulled through some historical changes to stations which are passed on to HadISDH. This and the additional year of data results in small changes to station selection. This is rolled into the major increment of X from 3 to 4 rather than also incrementing the Z element. The homogeneity adjustments differ slightly due to sensitivity to the addition and loss of stations, historical changes to stations previously included and the additional 12 months of data. More information can be found at <http://hadisdh.blogspot.co.uk/2018/03/2017-update-for-hadisdh4002017f.html>.

Version Number vX.Y.Z.0000p/f:

V4.0.0.2017f

Major Changes X:

HadISDH is now using the 1981-2010 climatology period to select and process stations. This results in better station coverage by ~300 stations and makes HadISDH more consistent with many other monitoring products. It reduces the need for later renormalising.

Minor Changes Y:

All processing steps for HadISDH remain identical apart from the removal of stations with very large homogeneity adjustments. Previously, any stations with adjustments in dry bulb temperature and dew point temperature greater than 5 degrees Celsius were removed. Now we additionally remove any stations which have adjustments in specific humidity greater than 3 g/kg or relative humidity greater than 15 %rh. This results in a removal of 54 stations in total. Given the Major Change X above we have not incremented a Minor Change Y.

Bug fixes / historical data updates Z:

There has been a minor bug fix in the gridding code to prevent very occasional duplicate or station with some supersaturated / sub-zero (q, e) values being gridded. Retrospective improvements to the historical data in the ISD archive are ongoing and have been incorporated here where stations appear in previous and this new HadISDH version. These have not been documented. Given the Major Change X above we have not incremented a Change Z.

Start Date DD.MM.YYYY: 1973-01-01

End Date DD.MM.YYYY: 2017-12-31

HadisdhTable (Baseline documentation): No change – URL: <http://cedadocs.badc.rl.ac.uk/1267/>

Reference: No change

Other notes: The update blog post is here: <http://hadisdh.blogspot.co.uk/2017/02/2016-update-for-hadisdh3002016p.html>