Reviewer#2 of "HadISDH land surface multi-variable humidity and temperature record for climate monitoring" by Kate Willett et al.

Following up on the previous years' publication of Willet et al. (Clim. Past, 9, 657–677, 2013) this paper describes the next version of the HadISDH product and its enhancements towards a multi-variable product covering all variables relevant to determine humidity from land-surface observations.

We again look at an excellently written paper and there's no doubt that it merits publication as it complies with the CPD assessment criteria on the levels „good" or „excellent".

The Significance is excellent. A self-consistent multi-variable purely observational data set, ameliorated by two approaches of homogenization is the highly needed information required to access re-analysis data sets like the ERA family and vice versa. A comprehensive comparison between the two worlds of climate reality is not provided here (to the disappointment of reviewer # 1) but I think this would go beyond the scope of this paper.

The Scientific Quality is excellent as well. All methods are described exhaustively and fellow scientist with enough talent and time would be able to reproduce the results presented here, given that all original data would be provided to them.

Presentation Quality is good. Despite many excellent Figures (we are all used to from reading BAMS SOC) there is a little bit of improvement potential remaining as it comes for Figures 2 and 3 were information that should make it into the captions is hidden almost unreadable (the reviewers eyes are obviously weaker than the authors' ones)

Minor issues:

The homogenization and (rather simple) interpolation methods and their robustness despite the rather limited set of stations take advantage of the fact that temperature and humidity variables behave far more "friendly" than precipitation. Maybe the authors are inclined to insert this caution remark at a suitable place in the manuscript to prevent those colleagues tending to generalize this approach towards precipitation on similar sized (< 10 000 stations) data bases from disappointments.

p2720 l22 – p2721 l4: This is a quite speculative statement, only valid for land-surfaces with "marine" climates.

P2722 l13: If you use superlatives like "first" please add "to the author's knowledge".

Some sub-headers in the Section 2 (like you have done in Section 3) would help structuring the step by step description of the processing

P2723 l14: Maybe you want to make this link to the station list explicit by adding "v102_2013f/files/hadisd_station_info_v102.txt" to the generic one.

P2726 l20: The COST HOME benchmark (Venema et al., 2012) favoured other homogenization packages (PRODIGE). Maybe you want to justify why you stick to the USGHCN one

P2739: The RH decline is really an irritating feature, together with its coincidence with the hiatus. Maybe we only need to wait for the upcoming El Ninjo, but to what extend could automation of weather station that is still ongoing but started in the early 2000ends play a role?

P2727 l6: Just proud I found a typo as a non-native speaker reading a native speakers paper: omit "a"

P2756: Caption Figure 7: The second typo I managed to spot in the entire manuscript: Last sentence should end with "than in the Russia/Eastern Europe group."