Uncertainties related to the production of gridded global data sets of observed climate extreme indices

Lisa Alexander[†]; Markus Donat [†] UNSW, Australia Leading author: <u>I.alexander@unsw.edu.au</u>

New global gridded data sets of extreme climate indices derived solely from daily in situ observations of temperature and precipitation are currently being produced in order to assess observed regional changes in the frequency and intensity of climate extremes within a global context. Inherent to the production of these data sets are not only the uncertainties related to the observations themselves (e.g. instrumental errors, errors of representivity, inhomogeneities introduced through station relocation, different regional observing practices) but also uncertainties related to methodological choices made ('parametric' uncertainties) as well as the fundamental assumptions made within a methodological framework ('structural' uncertainties). This poster presentation will assess the effect that these uncertainties have in the production of such data sets, including those related to data quality, homogenisation, sampling, gridding techniques, and time period considered. The robustness of the identified regional changes is investigated by testing the effects of different approaches and adjustments in the individual processing steps on the results. This allows us to quantify the different sources of uncertainty, and to assign uncertainty ranges to the observed regional trends.