



Bias adjustment of global upper air temperature data

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Radiosonde data are an important component of the global observing system since the late 1930s. Since the radiosondes have constantly improved over the past decades, they need to be homogenized in order to be useful for climate science. An overview of the efforts at the University of Vienna for global radiosonde temperature homogenization is presented.

Various homogenization techniques are discussed, all of them utilizing background forecasts or analyses from global reanalysis efforts such as the surface data only NOAA 20th century reanalysis and the recently available ERA-20C as well as full reanalyses such as ERA-Interim. Whereas break detection is always based on comparison with reanalysis products, the break size estimates are computed either by comparison with reanalysis data (which may or may not be dependent on radiosonde observations, depending on the observations assimilated) or by comparison with neighboring radiosondes.

Possibilities to group radiosonde stations together in order to get larger samples for bias estimations are also discussed.