



Solar elevation dependent radiosonde temperature bias adjustments back to the 1940s

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The well established RAOBCORE/RICH bias adjustment system for radiosonde temperature records has been enhanced to cope with seasonal changes of solar elevation dependent biases. It is argued that the seasonal cycle of reanalyses is more reliable than that of certain radiosonde types, especially at places where the radiosondes are launched around dawn or dusk, i.e. at high latitudes or near 90E/90W. Furthermore the data set has been extended back to the late 1940s, using JRA-55 and ERA-preSAT background departures as reference. For verification the adjusted data are compared against independent data sets and reanalyses as far as they are available. Suitability of the adjusted data as input for future reanalyses is discussed.