



Recording of solar radiation components since 75 years in Potsdam (Germany)

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The components of the solar radiation are very important for climate analysis. Already on January 1st 1937 in Potsdam (Germany) the recording of hourly totals of direct, diffuse, and global solar radiation component has been started in parallel.

This paper describes the history of these records and all the influences which affect the time series e. g. the used radiation instruments, the methods of calibration, the different types and methods of recording, changes of the measuring site. The impact of different factors is described and analyzed. In a further step, the different time series are tested against homogeneity and the results are also discussed.

Long time series, especially in the field of radiation measurements, are almost never homogenous because it is nearly impossible to use the same instruments over decades. Therefore, it is very important to have independent measurements which have to complement each other as in the case of the Potsdam radiation time series it happens. Finally, some important results concerning the climate change are discussed. It is shown that they are in good agreement with findings from other stations having similar records.