



A first approach to the homogenization of daily data using weather types classifications (HOWCLASS)

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The homogenization of daily data is a difficult task, as involves adjusting values recorded under very different and specific meteorological situations and due to larger inter-diurnal and spatial variations compared to those characterizing lower resolution data (i.e. monthly, seasonal and annual data). We introduce here a new method for the (Homogenization of Daily Data Using Weather Types Classifications, HOWCLASS) for the adjustment of climatological elements on a daily resolution. We benefit from the intensive research which has been done recently in the fields of homogenization and weather types classifications, specially in the framework of two COST Actions: Action ES0601, Advances in homogenisation methods of climate series: an integrated approach (HOME) and Action 733, Harmonisation and Applications of Weather Types Classifications for European Regions). The basic idea underlying HOWCLASS is the aggregation of daily values into weather types and the calculation of average adjustments for each one of them. The development of HOWCLASS needs to combine 3 basic items: the specific characteristics of the climatological element (temperature, precipitation, etc.); the detection/correction algorithm (SNHT, RhTest, Caussinus-Mestre, MASH, etc.) and the adequate weather types classification (manual classifications, like those derived from the Lamb weather; automated classifications, based either on different correlation analyses or clustering methods; hybrid classifications) for the geographical domain of the studied time series. Other factors cannot be missregarded, like the metadata availability, the impact of the annual cycle, the network density, etc.

As a first step, we start -and present here – with a simple approach using the SDATS (Spanish Daily Temperature Series), the Standard Normal Homogeneity Test and the weather type classification developed by D. Rasilla for the Iberian Peninsula, using the EMSLP pressure data, to correct a selection of inhomogeneities well known after our (limited) metadata information. This work is being developed under a PhD project linked to the CAFIDEXPI grant (CGL2007-65546-C03-02).