



Application of Test Reference Years basic data for human-biometeorological issues

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The basic dataset of Test Reference Years from the German Meteorological Service (DWD) has a high temporal (1 hour) and spatial resolution (1x1 km) and contains all meteorological parameters necessary to compute the thermal index “Perceived Temperature” with the “Klima-Michel-Model”. It makes possible to assess thermal conditions like heat stress, cold stimulus, cold stress and the thermal comfort zone for the public, tourism and health care.

The analyses are comprised in a tool, which is simple to use and provides several different options to compile the personal input information of the user. Options to select are the geographic coordinates of a Place and/or an Area of Interest in Germany and the time period of input data (min: 1 year, max: all 18 years from 1995 - 2012).

The frequency distribution of the thermal perception classes are presented for both a day and a year, averaged over the selected time period, valid for the raster cell containing the chosen Place of Interest. The Climate-Tourism-Information-Scheme (CTIS) displays the frequency of days with heat stress, cold stimulus, cold stress, thermal comfort and warm-humid conditions for the Place of Interest, too. For the chosen Area of Interest, maps with are generated displaying the average number of days with heat stress and cold stimulus for every raster cell within the area.

In the assessment of thermal perception, a short-term acclimatization of the human body to the thermal conditions of the last 30 days is considered. This allows a comparison of the spatial distribution of heat stress or cold stimulus with and without acclimatization.