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Forecasting the weather
- ensemble techniques
in probabilistic weather prediction

The urban heat island – an important factor in current and future climates: a straightforward assessment method

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Whenever human comfort in urban areas and its future development is addressed, the need to incorporate the effect of the Urban Heat Islands (UHI) into climate projections emerges. A straighforward approach to pair the magnitude of the UHI with temperature series of hourly resolution will be presented. It stems from engineering considerations where, in order to calculate the performance of systems to heat, cool or ventilate buildings, suitable atmospheric data (near surface data) sets are required. A well-introduced concept is the construction of so-called Test Reference Years (TRY) in which the "typical" average or extreme climate of a year is amalgamated. The basic data are from reference stations which, as a rule, should not be influenced by UHIs.

Among the topics of the presentation will be ways to derive TRYs for the current climate and future climate projections with respect to average and extreme climate conditions. Moreover the added consequences of excess heating owing to the UHI on the urban thermal and humidity regime will be shown.