



Comparison of SSC and epidemiological approaches to evaluating links between heat stress and mortality in Prague, Czech Republic

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Reduced numbers of deaths during heat waves related to introduction of heat early warning systems has been demonstrated in many areas of the world. These systems are most often based on synoptic or epidemiological approaches to assessing the impact of heat on mortality. While the synoptic approach is based on the classification of air masses and the subsequent identification of oppressive air masses (OAMs), the epidemiological approach identifies direct relationship between time series of mortality and meteorological data (mostly air temperature). In this study, OAMs and oppressive days (ODs) will be identified in the period May-September 1994-2013 using selected methods of the synoptic (SSC) and epidemiological approach (GAM, piecewise regression), respectively. Relations between mortality daily data (adjusted for long-term and seasonal changes) and both meteorological and non-meteorological factors (pollution, day of the season, the length of heat waves, year) within OAMs and ODs, will be identified in the "training" years. The resulting regression relationships will be tested on independent "testing" years to evaluate the ability of different approaches to predict days with increased mortality. The results of the project may help to refine the criteria for issuing biometeorological forecasts and warnings of possible adverse heat effects.