



Trends in heat-related mortality in urban population of the Czech Republic

Aleš Urban (1), Jan Kyselý (1), Eva Plavcová (1), Petr Štěpánek (2,3)

(1) Institute of Atmospheric Physics, Czech Academy of Sciences, Prague, Czech Republic, (2) Global Change Research Centre, Czech Academy of Sciences, Brno, Czech Republic, (3) Czech Hydrometeorological Institute, Brno, Czech Republic

The study resumes previous research that found significant effects of hot spells on increased mortality in highly urbanized regions of the Czech Republic (Urban et al. 2016), and declining trends in heat-related mortality in the Czech population as a whole (Kyselý and Placová 2012). We analysed hot spells during 1994–2015 and temporal changes of their effects on mortality in several urban regions with different overall socioeconomic and environmental conditions. While Prague and Brno represent relatively wealthy cities with high socioeconomic status, NW Bohemia and the Ostrava region are regions with the highest unemployment in the Czech Republic and poor air quality due to heavy industry. We analyzed mortality time series for each region, adjusted for long-term trend, seasonality and weekly cycle, using generalized additive models. An updated high-resolution gridded meteorological database was used in the analysis.

The preliminary results show that while in cities with high socioeconomic level (Prague and Brno) the previously observed declining trend in heat-related mortality was confirmed, in regions with low socioeconomic level the trend was insignificant and rather increasing. The results suggest that trends in heat-related mortality depend on the level of socioeconomic deprivation of population. The risks of climate change need to be considered with respect to various population groups and their vulnerability.

References:

Kyselý, J., Plavcová, E., 2012. Declining impacts of hot spells on mortality in the Czech Republic, 1986–2009: Adaptation to climate change? *Clim. Change*, 113(2), 437–453.

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