

Meteorological causes and human mortality impacts of extreme hot weather in summer: a comparative study

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funded by Czech Science Foundation and Korea Research Foundation in 2007-2009

Abstract

Evaluation of meteorological causes and impact assessments of hot weather on human health are topical issues in the scientific literature. There is a concern that frequency and severity of such events have increased recently in the areas under study, and that this trend is likely to continue toward future due to a global warming. The aims of this joint project are to evaluate and compare meteorological causes of the recent hot summer episodes in both areas, and to assess their impacts on human mortality. Three principal issues that will be investigated in comparative ways are (i) estimation of return periods of the recent (2006) severe heat waves that affected central Europe and Korean Peninsula, (ii) the role of persistence of the atmospheric circulation in the occurrence and severity of the heat waves, and (iii) the development and applicability of objective air-mass classifications in the evaluation of mortality effects of hot weather. The results may reveal large differences in responses to hot weather between two populations with comparable economic status and recent developments but different cultural environments, and will be important to minimize socio-economic damages and save lives in both countries.