



Subjective heat stress of urban citizens: influencing factors and coping strategies

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Given urbanization trend and a higher probability of heat waves in Europe, heat discomfort or heat stress for the population in cities is a growing concern that is addressed from various perspectives, such as urban micro climate, urban and spatial planning, human health, work performance and economic impacts. This presentation focuses on subjective heat stress experienced by urban citizens. In order to better understand individual subjective heat stress of urban citizens and how different measures to cope with heat stress in everyday life are applied, a questionnaire survey was conducted in Karlsruhe, Germany. Karlsruhe is located in one of the warmest regions in Germany and holds the German temperature record of 40.2°C in August 2003. In 2013, two hot weather periods with continuous heat warnings by the German Weather Service for 7 and 8 days occurred during the last 10 days of July and first 10 days of August 2013 with an unofficial maximum temperature of again 40.2°C on July 27th in Karlsruhe (not taken by the official network of the German Weather Service). The survey data was collected in the six weeks after the heat using an online-questionnaire on the website of the South German Climate Office that was announced via newspapers and social media channels to reach a wide audience in Karlsruhe. The questionnaire was additionally sent as paper version to groups of senior citizens to ensure having enough respondents from this heat sensitive social group in the sample.

The 428 respondents aged 17-94 show differences in subjective heat stress experienced at home, at work and during various typical activities in daily routine. They differ also in the measures they used to adjust to and cope with the heat such as drinking more, evading the heat, seeking cooler places, changing daily routines, or use of air condition. Differences in heat stress can be explained by housing type, age, subjective health status, employment, and different coping measures and strategies. While some results match with expectations and also with results obtained in other studies, for example that people living in the attic floor experienced higher subjective heat stress levels at home, some results are surprising: against expectations, respondents 65 years and older on average reported lower subjective heat-stress levels than younger ones – a result that can partly be linked to the different coping strategies applied by both groups.