

Summary

The impact of climatic effects on human health has been proven in several studies and particularly urban heat stress has been linked to mortality, morbidity as well as a reduced quality of life. However, up to now little is known about the spatial patterns and processes of heat stress risk on a city-wide scale linking socio-economic and biophysical dimensions of vulnerability. The objectives of this module are therefore (1) A multi-scale analysis of vulnerability of the population to urban heat stress, (2) A risk analysis to indoor and outdoor urban heat stress for selected vulnerable population groups, (3) Scenario development of likely future vulnerability and risk under different alternatives of options. To account for the heterogeneous und multi-dimensional datasets and to explore conditional dependencies between influencing variables we focus on a machine-learning modelling approach for urban heat stress. The expected outcomes are methodological developments of machine-learning for modelling vulnerability and risk and insights on urban heat stress for further developing coping strategies.