



Cooling Town – a hot topic

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The research project “Cooling Town” will investigate the thermal properties of landscapes and landscape elements and assess the thermal connectivity between urban areas and surrounding landscape components in South Tyrol (Italy). Surface temperature regimes will be analysed for selected municipalities and evaluated in regard to their relations to urban temperatures, regional land use/cover and topography. The study accounts for the little knowledge on temperature regimes of mountain landscapes and on the thermal connectivity between urban areas and surrounding landscapes.

Three different levels of temporal and spatial detail are considered to investigate the driving forces of rural-urban temperature regimes and their connectivity. A static approach will relate temperature levels of urban areas with surrounding land use, land cover, landscape composition, and topographic setting, for deriving the landscape components and characteristics that are affecting urban temperatures. A repetitive approach will use monthly thermal satellite imagery to derive surface temperatures to analyse the correlation between urban temperatures and the temperature distribution in the surrounding landscapes. The dynamic approach will focus on one local area and will provide spatial and temporal temperature profiles that will result in a four-dimensional (4D) temperature model for a larger city in South Tyrol. The project provides new scientific insight into the thermal properties of landscape components, the temperature regimes of landscapes and their spatio-temporal relation to urban areas in mountain environments.