



## **The human-biometeorological information in urban climatic map in Taichung, Taiwan**

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Urban Climatic Map (UC-Map) is an information that presents features of urban climate relevant for planning by integrating the climate parameters, land use and building information etc. so that planners could easily find the climate-related characteristic, existing problems and useful urban climatic information to make correct decision during the planning process. An area of approximately 163 km<sup>2</sup> with around 1,061,065 people that includes the metropolitan area of Taichung city was chosen as a study area in which to analyze the human-biometeorological information on UC-Map platform. In this study, the climate basic information platform is established by using GIS program in different layers. Firstly, climate and geographical information for each layer are based on the resolution of the grids, including land use, land cover, slope, population density and building attributes. Secondly, the calculation of thermal indices consisted of multiple layers are performed, including sky view factor (estimated by SkyHelios), imperviousness, total floor area, etc. Thirdly, the traverse-and-fixed measurement for the air temperature, relative humidity, wind speed, are also conducted. Mean radiant temperature are also measured and calculated by pyranometer and standard/compact globe temperature. Finally, the human-biometeorological conditions in each grid are estimated by the regression model obtained from measurement, GIS information, long term climate data. The results of the map will be benefit for the urban planning and building design adapted to local climate, and highly related to the increasingly issue of climate change and global warming.