RESEARCH ON URBAN FORM AND ITS THERMAL ENVIRONMENT EFFECT BASED ON REMOTE SENSING FROM UNMANNED AERIAL VEHICLES

Bachelor's thesis

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ABSTRACT

The relevance of the research lies in exploring the ways and mechanisms of the influence of complex urban forms on land surface temperature at two-dimensional and three-dimensional spatial scales, so as to provide a scientific basis for urban planning and reconstruction to mitigate the urban heat island effect.

The current direction of research is to take the multi-spectral UAV aerial survey data images obtained by the UAV remote sensing platform as the data source, based on digital means and the extraction of multi-dimensional indicators of urban form, and analyzes the relationship between urban 2D and 3D form and urban surface temperature by means of spatial analysis and regression analysis modeling.

The object of this study the urban area around South Lake, Yuhang District, Zhejiang Province, China, and the subject is urban form and its thermal environment effect.

The purpose of this qualification work is to explore the influence of complex urban forms on ground temperature in two-dimensional and three-dimensional space and reveal the underlying mechanism. To achieve the purpose of the study, the following **tasks** were set:

1.To obtain the thermal environment information of urban underlying surface and surface based on UAV remote sensing

2.To quantitatively analyze the urban spatial form combined with two-dimensional and three-dimensional perspectives.

3.To study the thermal environment effect of urban spatial form based on regression model.

Structure of the work. The qualification work consists of introduction, four chapters and conclusions. The reference list includes 61 positions. The thesis is laid out on 57 pages. Contains 12 figures and 12 tables.