

## 基于RS的郑州市城市热岛效应时空演变

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## Spatiotemporal variation of urban heat island in Zhengzhou City based on RS.

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## 摘要

采用郑州市1988年5月14日Landsat卫星TM传感器遥感影像和2001年5月10日ETM+传感器遥感影像以及当地相关气象资料, 利用单窗算法反演计算了卫星图像的亮度温度并以此制作出相关专题图. 结果表明: 随着郑州市建成区的不断扩大, 城市热岛效应不断加剧, 与1988年相比, 2001年市区高温区域向东北和西南方向存在明显偏移与扩张, 这与低植被覆盖区域和城镇居民用地变化趋势基本相同. 为缓解城市热岛效应的不断加剧, 在城市化的同时应注重绿化工作并选用合理的绿化方式.

**关键词:** 城市热岛效应 郑州市 陆面温度 遥感 下垫面

## Abstract:

By using two Landsat remote sensing images (May 14, 1988 by TM sensor and May 10, 2001 by ETM<sup>+</sup> sensor) and local meteorological data, this paper analyzed the causes and harms of urban heat island (UHI) in Zhengzhou City. The brightness temperatures of the images were calculated by mono-window algorithm, and related thematic maps were figured out. The results showed that with the expanding urban area of Zhengzhou City, the UHI effect was growing. Comparing with that in 1988, the high-temperature region of the City in 2001 had a clear shift and expansion towards northeast and southwest, being similar to the change trends of the low vegetation coverage area and urban land area. In order to alleviate the growing UHI effect, attentions should be paid on the urban greening work and the choice of reasonable greening patterns in the process of urbanization.

**Key words:** urban heat island (UHI) Zhengzhou City land surface temperature remote sensing underling surface

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