

The main results and advancement of the present research are the following.

(i) The utility of LANDSAT TM images to detect the land surface brightness temperature in Xuzhou city have proved to be effective. The surface brightness temperature of urban area is obviously higher than that of suburb, and the sequence of the average brightness temperature from high to low is high-rise building, low-rise building, grassland, woodland, wetland, and water body.

(ii) The effect of various land covers on surface brightness temperature is significant difference. Water has cooling effect on its surroundings and the effect s gradually reduced with the distance. The influence radius of water body on surface brightness temperature, like Yunlong Lake (about 5.80 km²), is around 300m.

(iii) The results show that NDVI and Tb represent negative correlation, while NDBI and Tb represent positive correlation, and the correlation coefficient increases with the profile radius expanded. Comparison between NDVI and NDBI, the former is higher than the latter in the correlation with Tb, but on the contribution to Tb, the latter is far higher than the former.

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