ABSTRACT

The reconstruction of land surface temperature is of great significance for climate research, environmental monitoring, agricultural management, urban planning and other fields. To study the correlation between surface influencing factors such as topography and landform and LST, and to more accurately understand the changes of surface thermal environment and its driving mechanism, so as to provide key support for constructing more accurate temperature models and reconstructing surface thermal environment. Taking the mountainous area of southern Zhejiang Province as a case, this study used remote sensing technology and geographic information system (GIS) analysis to compare and analyze the thermal environment under the natural surface and the urban thermal environment by using remote sensing image data, and discussed the driving factors of the winter surface thermal environment under different underlying surfaces, and analyzed the correlation between land surface temperature and various topographic factors and related indices in different types of ground objects in different time periods. The results show that the correlation between various topographic factors and land surface temperature shows obvious characteristic changes in different time periods and different types of ground features. Future research can further explore the driving factors of surface thermal environment in different seasons and geographical regions to fully understand the temporal and spatial variation characteristics of surface thermal environment.

Keywords: South Zhejiang mountainous area, land surface temperature, correlation, driving factors