

## Abstract Details

**Title:** Impacts of Land Use/Cover Change on Land Surface Temperature Using Remotely Sensed Data and GIS (2000-2017) Case Study: Nyala City- Sudan

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**Abstract:** Replacement of natural surfaces by artificial ones due to urban growth contributes to increase land surface temperature particularly in cities. Therefore, this research aimed to study the Influences of land use/cover change (LULCC) on land surface temperature (LST) in Nyala city, South Darfur state – Sudan during two different periods of summer (May) 2000 and 2017. In this study, remote sensing and geographical information system (GIS) techniques were applied to retrieve the land surface temperature (LST). Landsat (TM, and TIR) Satellite imagery products were used to provide quantitative information on the effect of land use change on land surface temperature. Bands 5, 4 and 3 of (OLI) and 4, 3, and 2 of (TM) were used for urban interpretation. The results show that, the maximum LST has decreased by 1.6095oC in 2017 which might be attributed to possible variations in weather conditions, whereas the minimum LST is increased by 9.9678oC through the study period. The researchers conclude that, remote sensing and GIS technologies are effective tools for monitoring land use change and its impact on LST.

**Keywords:** Land use/cover change (LULCC), Land surface temperature (LST), Landsat TM (thematic mapper), Operational Land Imager (OLI) of Landsat 8, & TIR (thermal infrared).