Paper ID: 81135
interactive

IAF EARTH OBSERVATION SYMPOSIUM (B1)
Interactive Presentations - IAF EARTH OBSERVATION SYMPOSIUM (IP)

Author: Mr. Saeed Al Mansoori
Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

CHANGING PATTERNS OF LAND SURFACE TEMPERATURE IN COASTAL CITIES WITHIN ARID REGIONS: A SPATIAL AND TEMPORAL ANALYSIS

Abstract

This study explores the impact of climate change on Earth's global weather, with a focus on the rapid urbanization that has occurred in recent decades. The research specifically analyzes the changes in land surface temperature (LST) in the coastal cities of the United Arab Emirates (UAE), a region characterized by arid conditions and significant urbanization over the past 50 years. Utilizing Landsat and MODIS image by-products from 2000 to 2020, the study assesses LST in both spatial and temporal dimensions, comparing daytime and nighttime temperatures across summer and winter seasons. Additionally, land use and land cover changes in the area from the late 1970s to 2018 were mapped using a supervised classification technique. Surprisingly, the findings reveal that daytime LST in heavily urbanized coastal districts is lower by about 9C than in areas farther inland. This indicates a spatial LST inversion in the region. However, no similar trend was observed for nighttime temperatures. Temporally, while daytime LST has not shown significant increases in either season, nighttime LST has risen by approximately 17