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Integration of Artificial Neural Network with Geoinformatics Technology to Predict Land Surface Temperature within Sun City Jodhpur, Rajasthan, India

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Abstract : The Land Surface Temperature (LST) is an essential factor accompanying to rise urban heat and climate warming within a city in micro level. It is also playing crucial role in global change study as well as radiation budgets measuring in heat balance studies. The information of LST is very substantial to recognize the urban climatology, ecological changes, anthropological and environmental interactions etc. The Chief motivation of present study focus on time series of ANN model that taken a sequence of LST values of 2000, 2008 and 2016, realize the pattern of variation within the data set and predict the LST values for 2024 and 2032. The novelty of this study centers on evaluation of LST using series of multi-temporal MODIS (MOD 11A2) satellite data by Maximum Value Composite (MVC) techniques. The results derived from this study endorse the proficiency of Geoinformatics Technology with integration of ANN to gain knowledge, understanding and building of precise forecast from the complex physical world database. This study will also focus on influence of Land Use/ Land Cover (LU/LC) variation on Land Surface Temperature.

Keywords : LST, geoinformatics technology, ANN, MODIS satellite imagery, MVC
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