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**THE USE OF REMOTE SENSING AND GIS TECHNIQUES AS AN AID TO
RETRIEVE LAND SURFACE TEMPERATURE FROM LANDSAT TM OVER
ALQISSIM, SAUDI ARABIA**

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ABSTRACT: This study presents environmental impact assessment and the status of land surface temperature (LST) standard products retrieved from Landsat TM data for AlQassim, Saudi Arabia. The proposed technique employs our developed mono window LST algorithm for retrieving surface temperature from Landsat TM. The land surface emissivity and solar angle values are needed in order to apply these in the proposed algorithm. The surface emissivity values were computed based on the NDVI values. The LST map derived from ATCOR2_T in the PCI Geomatica image processing software was used for algorithm calibration. The results show a high correlation coefficient (R) and low root-mean-square error (RMS) between the LST values retrieved from the proposed algorithm and ATCOR2_T. This study indicates that the proposed algorithm is capable of retrieve accurate LST values and the derived information can be used in the environmental impact assessment for AlQassim area.