An Algorithm for Land Surface Temperature Analysis of Remote Sensing Image Coverage Over AlQassim, Saudi Arabia

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SUMMARY

An algorithm approach to derive the land surface temperature (LST) of remote sensing image is presented. The algorithm was based on the brightness temperature from satellite sensor, surface emissivity and solar zenith angle of AlQassim, Saudi Arabia. Land Surface Temperature (LST) derived from Landsat TM 5 imagery using a simple regression calibration model was used in this study. The surface emissivity was derived from the NDVI values. The LST used in the algorithm calibration were derived from ATCOR2_T in the PCI Geomatica image processing software. The correlation between the land surface temperature and brightness temperature was increased significantly after the surface emissivity and solar zenith angle were added to the model. In this study, we are using two dates of satellite imagery for retrieval the LST values. The LST of the two different seasons were discussed in this study. The result of the experiment indicates the high spatial resolution satellite image can be used to derive the LST values.

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