



“Gheorghe Asachi” Technical University of Iasi, Romania



LST CALCULATOR: A PROGRAM FOR RETRIEVING LAND SURFACE TEMPERATURE FROM LANDSAT TM/ETM+ IMAGERY

Hakan Oguz

*Kahramanmaras Sutcu Imam University, Faculty of Forestry, Department of Landscape Architecture,
46100 Kahramanmaras, Turkey; E-mail: hakan@ksu.edu.tr*

Abstract

In this study, a computer program, the Land Surface Temperature Calculator (LST Calculator) was developed in Visual Basic .NET (2008) which employs the Radiative Transfer Equation (RTE) method. The LST Calculator is a valuable tool to study thermal environments using the thermal band of Landsat TM/ETM+ data and make the land surface temperature retrieval much simpler and faster. LST can be retrieved with this tool by inputting required parameters in the program. Thus, this program will be helpful to those who are interested in studying thermal environment. A Landsat Enhanced Thematic Mapper Plus (ETM+) image of Dallas – Fort Worth Metroplex was used as a case study for demonstration purposes.

Key words: LST calculator, Dallas – Fort Worth Metroplex area, emissivity, land surface temperature, NDVI, visual basic .NET

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