

The Software Design and Development of Temperature and Emissivity Separation Based On TASI Data

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Abstract: Thermal Airborne Hyperspectral Imager(TASI) can provide abundant useful information for the retrieval of emissivity spectrum and temperature. This paper summarized several methods for temperature and emissivity separation. In addition, design and development the software based on IDL. At last, Through field experiment, due to the effects of scale and atmosphere, the predicted value does not equal to the laboratory measurement, but the pattern of predicts is similar to the laboratory measurement; Therefore, the accuracy of processing result can satisfy operational application and it is feasible to retrieve the emissivity spectrum and temperature for TASI data. Based on TASI data, we can extract rock alteration information in xuemisitan region of Xinjiang province respectively, and it is possible to monitor the coal fire and the heat anomalies. The result of inversion conforms to the geological fact.

Keyword: temperature; emissivity spectrum; separation.