



Burnt area delineation from a uni-temporal perspective based on Landsat TM and ALI satellite radiometers: results from the analysis of a [U+FB01] re event in Greece

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Wildland fires in the Mediterranean region are regarded as one of the most threatening sources for property, infrastructures as well as ecosystems.

In this letter, we examine the combined use of selected parametric and non-parametric classifiers (such as of Maximum Likelihood, Support Vector Machines) with satellite observations from Landsat TM and Advanced Land Imager (ALI) imagery, in obtaining maps of burnt area. As a case study it selected a major destructive fire occurred during the summer of 2009 in the Prefecture of Eastern Attika in Greece, for which both a TM and ALI image were acquired shortly after the fire suppression.

Accuracy of the examined in this study datasets and algorithms for delineating the burnt area was evaluated on the basis of the analysis of classification accuracy assessment as well as comparisons from the SAFER rapid response service operated in Greece during the year of 2009, using IKONOS satellite acquisitions.

A discussion follows the analysis of the results, focusing on the adequacy of the combined use of the satellite sensors used in this study with the properties of the algorithms in providing burnt area mapping rapidly and cost-effectively in the study region, representative of a typical Mediterranean setting.

Keywords: burnt area mapping, Landsat TM, ALI, SAFER rapid response service