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Mapping spatial patterns of fuel properties using multiscale satellite data set

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Mapping of fuel types is very important for computing spatial fire hazard and risk and simulating fire growth and intensity across a landscape. Regional, national global fire fuels assessments require the development of large-area vegetation datasets and improved vegetation mapping techniques. Satellite remote sensing may be an effective data source for large area fire fuels mapping and characterization. The advent of sensors with improved spectral and spatial observational capability may improve the accuracy and reduce the cost of fuels mapping. Nevertheless, there are a number of research issues that need to be addressed to accomplish this objective. Mapping fire fuels requires data and information about vegetation types, structure and green biomass.
This paper is focused on preliminary results we obtained from different fuel mapping algorithms, including classification based on simple rules, K-Nearest Neighbour, decision tree, and regression techniques. The considered algorithms were applied to a multisensor, multiscale, multispectral satellite data set acquired for different selected test areas located in the Southern Italy