

## **Remote sensing for illegal dumps detection: a case study in southern Italy**

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This paper presents a case study about the detection of illegal dumps from optical satellite images in a large territory falling in the provinces of Naples and Caserta, Southern Italy. This location is also known with the term "Terra dei Fuochi" because in this area is particularly widespread the phenomenon of waste burning and, over the past decades, there have been many landfills of hazardous waste of industrial origin. In addition to the potential damage caused to the environmental matrices, this situation has led to considerable concerns over the health of citizens and a serious economic impact on the agricultural sector.

In order to contrast this phenomenon, the government of the Campania Region organized some prevention, monitoring and repression activities. In particular, the monitoring activities are employed by periodic inspection of sites, which are often object of illegal deposits (former quarries, illegal dumps, as well as city and country roads). The periodic inspection is usually performed by patrols of the company SMA Campania (the in-house regional company, specialized in environmental protection), and law enforcement.

As part of a project, the remote sensing company MAPSAT srl and CIRA (the Italian Aerospace Research Center), have proposed to SMA Campania to support the periodic monitoring inspection of the patrols, with optical satellite acquisitions. This paper describes the proposed approach, the type of data used, the technical problems encountered and solutions introduced. The periodic monitoring with biannual satellite acquisitions, was effective for both finding new illegal spills and to follow the evolution (in terms of extension) of landfills already found in the past.