Geophysical Research Abstracts
Vol. 19, EGU2017-9072, 2017
EGU General Assembly 2017

How the availability of free satellite data can improve the observation of critical infrastructures: a proposed application to landfills for municipal solid wastes

Andrea Scozzari (1), Giulio Masetti (2), Brunella Raco (2), and Raffaele Battaglini (3)

(1) Consiglio Nazionale delle Ricerche (CNR-ISTI), Pisa, Italy (a.scozzari@isti.cnr.it), (2) Consiglio Nazionale delle Ricerche (CNR-IGG), Pisa, Italy (g.masetti@igg.cnr.it), (3) Terrelogiche Srl, Venturina (LI), Italy

Landfills for Municipal Solid Wastes (MSW) produce about 20% of the total anthropogenic methane released to the atmosphere. As a consequence, these infrastructures require a systematic and efficient monitoring. Various techniques have been proposed until now for the estimation of biogas production and its release, by using more or less direct measurements, mostly characterised by a low or completely absent invasivity.
During the last 13 years, observational data about a MSW disposal site located in Tuscany (Italy) have been collected on a regular basis, consisting in direct measurements of gas flux with the accumulation chamber method, combined with infrared radiometry performed in situ with portable radiometers.
The availability of free Landsat imagery and the more recent availability of ASTER data (freely available since April 2016) open new monitoring possibilities, in addition to the in situ measurements described above. In particular, we present the preliminary results of a study about the usability of low resolution thermal infrared scenes to build timeseries describing the overall status of a waste disposal site.
This work discusses the possibility to complement in situ measurements with satellite observations, taking benefit from the high revisit time with respect to the timings of in situ campaigns.