



## **Sentinel-2 images for the monitoring of dissolved contaminants on Sicily's south-east coast**

Anselme Muzirafuti, Giovanni Randazzo, Stefania Lanza, Antonio Crupi, Maria Cascio, Giovanni Barreca, and Francesco Gregorio

Università degli Studi di Messina, Fisica e Science della Terra, Messina, Italy (muzansel@gmail.com)

Coastal environment pollution is one of major challenge facing coastal area development. A large number of Sicilian population lives in low laying area where, among other economy activities, tourist and intensive agriculture are two of most important sources of revenue. However, its beaches are threatened by natural and anthropic phenomena ranging from sea level rise, coastal erosion to marine pollution. In efforts to manage the influx of harmful substances reaching Sicily's south-east coast, we present methodological approach integrating land use\land cover and normalized difference suspended sediment index mapping techniques to identify the origin of dissolved sediments observed in coastal water especial during rainy season. In this paper we used 12 freely-available Copernicus sentinel-2 images acquired during 2018. Water color analysis on satellite images shows that the contaminants reach the sea through river runoff and when arrived in relatively calm water in particularly in pocket beaches they stay in near shoreline for a while however they can also be exported further offshore when they reach the sea in high dynamic water where currents and waves play a role in their distribution. These sediments are sometimes erosion products from agricultural fields or contaminated soils containing organic or chemical fertilizers used for crop protection or for vegetation growth. The monitoring of sediments can help characterize and determine the fate of these products for a better management of this coastal area.

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