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# Exploitation of multi-temporal Stripmap and ScanSAR acquisitions for weed infested equatorial inlands waters in synergy with optical EO data: Winam Gulf, Lake Victoria, Kenya, case study

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Aquatic weeds are a kind of water "biological pollution" and a major component of global change due to human impacts. Aquatic weed species can be defined as aquatic plants (macrophytes) not desired by the managers of the water bodies where it occurs, either when growing in abundance or when interfering with the other species. Lake Victoria was interested by the highest infestation of water hyacinth since 1989 that caused significant socio-economic impact on riparian populations.
The relevance of the Lake Victoria for the economy of the region has been recognized by FAO that promoted an international project named Lake Victoria Environment Management Project (LVEMP). In this context, satellite remote sensing, offer the capability to rapidly and synoptically monitor large water ecosystem and detect vegetation cover dynamics over time.
Time series of MODIS NDVI data have been successfully applied to quantify vegetation activity and to measure vegetation dynamics even if many of these images results useless as consequence of the cloud contamination. Furthermore, others indicators related to water quality and composition, like concentrations of chlorophyll a (Chl a) coloured dissolved organic matter (CDOM) and total suspended solid (TSS) were obtained by a physics based approach.
This paper, following previous works related to MODIS imagery time series, aims at assessing the capability of medium/high resolution (Wideregion and Stripmap) COSMO-SkyMed ScanSAR time series imagery to support/supplement optical data, frequently affected by clouds, in the knowledge of temporal macrophytes growing cycles and sustain the monitor and management of the Lake Victoria waters.