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A new potential in the Ocean Color Observation by Micro-Satellites

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Since the launch of the Coastal Zone Color Scanner (CZCS) onboard Nimbus-7 in 1978, many ocean colour sensors, mostly in sun-synchronous orbit, have been launched into space by space agencies worldwide to observe biological and biogeochemical variables in the coastal and global oceans. These ocean color missions by the space agencies tend to be independent, providing separate data sets. However, a recent activity includes a merge of the satellite data set obtained from different sensors or missions, and shows an advantage to utilize many satellites for an increased data coverage and observation frequency. To put the advantage forward in the future ocean colour missions, practical issues, such as economic cost of launching many satellites, have to be solved. Meanwhile, technologies have also been evolving to result in manufacturing low-cost and small satellites (i.e. micro-satellites). Thus, we are now in a position to move forward from the classical observation style using an independent and single satellite to a new style using multi-satellite observation. In this presentation, we propose a utilization of multiple micro-satellites in the field of ocean colour observation as an example, showing some practical applications potentially useful for Asia.

Keywords: micro satellite, ocean colour