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T-Flap advances: instrumental and operative implementation

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Within the European MFS-TEP project a new expendable vertical profiler for fluorescence of chlorophyll a, pressure and temperature measuring was developed: the T-Flap (Temperature Fluorescence LAunchable Probe). The main features of this instrument concern the fluorescence measure in expendable mode, the low cost components, the electronics miniaturization, the modularity and flexibility of the system for a multi purpose application.
This technology has filled a gap in the measurements of chlorophyll a fluorescence, infact as compared with various instruments for measuring physical variables, there is a lack for the measurement of ecological and biological once. The measurement of chlorophyll a fluorescence is of fundamental importance as the basis for the estimation of phytoplankton biomass and thus the study of primary production in the seas.
As a result of the technological development achieved in MFS-TEP project has been awarded an European patent (EP1962089A1).
Afterward during the ADRICOSM-STAR project some improvements of the probe were carried out and experimental tests were performed during an oceanographic cruise. The tests have led to an upgrade of instrumentation and sensors and to the realization of new prototypes.
This new technology could be used in different operative applications: profiler along the water column (not expendable) and stand alone (in continuous surface acquisitions along tracks, in continuous acquisition on a buoy).
This work shows the technical characteristics of the instrument and the potential applications.