Automated detection of tsunamigenic signatures and reporting using multi-scale offshore in situ measurements for early tsunami warning and critical decision-support

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The critical detection and classification of tsunamigenic and other anomalous signals at various offshore hydrodyanmic observation stations is of paramount importance for the advancement of current early tsunami warning systems. Nevertheless, the challenges occur with the timely assessment of various hydrodynamic observations which exhibit diverse level of detection confidence and also their relative spatial locations with respect to the suspected tsunami wave source. In the TRIDEC project, researchers are currently working to establish an open service, which specialises in the automated detection and reporting of tsunamigenic events at various offshore observation stations. These stations will be located at various spatial ranges with respect to specific coastal zones of the Mediteranean Sea and the North-East Atlantic regions. The filtering of normal tidal and background hydrodynamic signal components is processed automatically while an intelligent process follows to identify anomalous patterns, including tsunami signatures. Levels of confidence on the detected tsunami signatures shall be established at various spatially located hydrodynamic observation stations prior to their fusion and push to the reporting and alerts for improved decision-support. This research programme in imporved and automated tsunami early warning is funded by the European Commission under the FP7 TRIDEC IP project 2010-2013)

References:

TRIDEC(2010-2013). Collaborative, Complex and Critical Decision-Support in Evolving Crises. EC Integrated Project, Contract: FP7 258723.