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Searching for tsunamis evidences on the Algarve (Southern Portugal) continental shelf sedimentary record

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Tsunami hazard assessment is important in order to prevent and/or minimize its effects, which is only possible if a complete and long record dataset of past events is available, allowing the estimation of their recurrence intervals. The knowledge of past tsunami events are based on instrumental, historical and geological records. Although instrumental and historical records are reliable sources they are limited in time. Geological records can give a much more extended reconstruction overview of thousand years, which can provide a good estimation of tsunami return periods.
Most of the existing studies have been conducted onshore and only a few were based on offshore sedimentary record. These last ones, have the advantage to provide a more continuous and almost undisturbed records but the identification of tsunami sediments in marine environment require a multi-proxy approach in order to better identify the allochtonous layers/deposits and to differentiate them from storm deposits.
In the context of ASTARTE project (FP7), five gravity and piston cores on the southern Portuguese continental shelf collected in 2008 and 2014 were studied. The methodology included XRF, MSCL, sedimentological and magnetic analyses. Preliminary results show some identifiable layers that may related with allochthonous sedimentary material, compatible with a genesis resulting from tsunami backwash sediment transport and deposition.
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