

# Testing Rock Magnetic and AMS Methods in Tsunami- and Storm-induced Deposits

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**Abstract:** Storm- and tsunami-deposits are generated by similar depositional mechanisms making their discrimination hard to establish using classic sedimentologic methods. A promising approach is to use rock magnetism techniques to search for new physical benchmarks of tsunami deposits and to integrate them into a multi-disciplinary study. To test our method, we investigate the 1755 Lisbon tsunami deposit from the Boca do Rio estuary and other Tsunami-induced deposits from Algarve (Portugal) and Huelva (Spain), as well as storm-like deposits for comparison. Magnetic methods repose on bulk (magnetic susceptibility, SIRM, Hc) and directional (AMS, paleomagnetism) magnetic properties. Results show that in most cases, the tsunami-induced deposit is featured by a low MS signal due to admixture of quartz (i.e. diamagnetic) from the littoral pit. The similarity of magnetic properties of the tsunami deposit and underlying sediments suggest that the source of the iron oxides is very proximate and issued from the erosion of the latter. Directional data are more problematic, since it

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