



Sediment source areas of earthquake-triggered megaturbidites in marine or lacustrine confined basins: implications for regional paleoseismicity

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Earthquake triggered megaturbidites documented in different confined Mediterranean confined basins are bearing several similarities with so-called seiche deposits induced by earthquakes in several large and deep Alpine lakes. Both of these mega beds are resulting from coeval subaquatic slope failures and the propagation of violent waves developing erosive currents along shore lines and shallow water depths but also locally within deep waters. They have a similar acoustic signature (i.e. a decimetric to plurimetric transparent acoustic facies ponded in the deepest part of confined basins with a high-amplitude basal reflection) and are characterized by maximal thicknesses ranging between 0.2 and 1.6 % of the basin's water depth. While lacustrine megaturbidites are essentially resulting from the remobilization of fine-grained clastic sediments (either deltaic depot-centers or slopes loaded by sediment plumes during deglaciation) and shallow water coarser particles by waves and bottom currents; little is known about the soft-sediment source areas of megaturbidites in the Mediterranean. Based on our understanding of sedimentary process associated with seiche deposits in lakes and taking into consideration the oceanographic characteristics of the Mediterranean Sea, multiples soft-sediment source areas can be identified and a new conceptual depositional model can be proposed for the development of tsunamigenic earthquake-triggered megaturbidites.