



Deformed sediments in the Dead Sea drill core: a long-term palaeoseismic record

Shmuel Marco and Elisa J. Kagan

Tel Aviv University, Department of Geophysics, Atmospheric, and Planetary Sciences, Tel Aviv, Israel (shmulikm@tau.ac.il)

The lacustrine 70 ka sediments outcropping around the Dead Sea contain superb examples of seismites that were formed at the margins of the lakes in water depths of <100 m. In previous studies we explored the temporal distribution and the physics of seismite formation. Now we examine the drill cores from the depocentre in order to understand how the deep basin sediments reacted to the earthquake vibrations and compare the record with that from the margins. Our interpretation is largely based on our acquaintance with the outcrops, on mechanical analyses, and on modern analogs. We realize that several types of disturbed layers that appear in the cores are seismites that do not appear in the lake margin facies but only at the depocentre, mostly transported material in the form of turbiditic slumps. We recognize numerous slumps of various thicknesses ranging from mm to several decimeters. The allochthonous contribution to the depocentre sediment load results with three times the thickness at the margins. Analyses of the anisotropy of the magnetic susceptibility (AMS) show mostly sedimentary fabric (vertical K3) or unstable scatter. Standard AMS analysis procedure requires multiple sampling for each level, but we can only recover one specimen. Therefore, we regard the results inconclusive. The main product of this stage is an inventory of all the features in the cores that we suspect to be seismites.