



## **Shallow structures in deep water: Quantitative seafloor morphology in the Levant basin, eastern Mediterranean**

Mor Kanari (1,2), Gideon Tibor (1), Tomer Ketter (1), and Schattner Uri (2)

(1) Israel Oceanographic & Limnological Research, Department of Geology and Coastal Processes, Haifa, Israel (mor.kanari@ocean.org.il), (2) University of Haifa, Department of Marine Geosciences, Haifa, Israel

We aim to characterize the shallow subsurface structures and deformations and to identify the transition surface between the Pliocene and Pleistocene in the deep part of the Levant basin (eastern Mediterranean), using high-resolution shallow seismic reflection and multibeam bathymetry.

The Levant basin at the eastern Mediterranean is considered a passive continental margin, where most of the recent geological processes are related to salt tectonics rooted at the Messinian deposits.

We analyze two sets of recently acquired high-resolution data from multibeam bathymetry and Chirp sub-bottom seismic reflection in the deep basin offshore Israel (water depths 1500-2100 m), allowing to analyze seafloor morphology and its underlying sediment with penetration depth up to ~50 m.

Preliminary results reveal distinct reflections in the top 30-50 m of the sediment that appear to represent the Pliocene-Pleistocene transition boundary. Additional subsurface structures (folds, faults, channel incision and infill basins) with apparent seafloor expression were identified and their quantitative analyses are in progress.

The studied spatial and temporal relations between these structures and strata are expected to provide insight on the relative timing of their formations and the character of the geological and geomorphological processes which form them. Characterization of these processes may help to better understand the link between sediment deposition in deep water and its relation to the shallower parts of the basin in the shelf and slope.