We present C export data from the DeepLev marine observatory, located at the southeastern Levant, 50 km west of Haifa, at water depth of 1,500 m. POC fluxes were measured for 18 months (Nov 2016 – May 2018) by automated and single bottle sediment traps at the recently-deployed DeepLev observatory and compared with water column profiles of ^{234}Th. While POC export in the basin is generally low (0.05-1 mmoleC m^{-2} d^{-1} at the base of the photic zone during Dec 2017 – May 2018), fluxes are quite variable, and the export pattern is mainly controlled by coastal discharge or shelf-resuspension by waves (winter peaks) rather than by marine primary production. This is demonstrated by larger POC fluxes measured by deep water and twilight zone traps, by tight correlation of POC with total mass flux and by lowering POC percentage of the total mass flux during winter peak events. Water column ^{234}Th profiles usually show photic zone deficits (compared with ^{238}U), but notably they frequently present deficits also in deep water, which is in support of mid to deep water lateral transport of particles. The average ^{234}Th-derived POC flux is almost one order of magnitude larger than that measured by the traps. It is suggested that while the traps capture the larger grain-size fraction, which is transported by terrestrial discharge or large shelf resuspension, the ^{234}Th method preferentially represents the finer size fraction, which could be related to wave resuspension, deep/intermediate water formation (Levantine Intermediate Water), or could document slow settling of fine-grained material at the end of the rainy season. Recent results of another 8 month deployment (Aug 2018 – March 2019) will also be presented, including C:N:P changes along the water column.