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The 1956 Greek tsunami recorded at Yafo (Israel) and its numerical modeling

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A unique record of the tsunami event excited by an earthquake in the Aegean Sea on 9 July 1956, which was registered at the Yafo (Israel) gauge, is processed and analyzed. Mathematical modeling of the 1956 tsunami assuming a co-seismic nature of its generation source resulted in waves with their amplitude close to that obtained from the records measured at Yafo. However, they do not contain significant spectral energy components with periods about 15 min as appear in the spectra of 1956 tide-gauge records. When slump movement, triggered by the main shock and/or by the largest aftershock, is suggested as a source of these tsunami waves, the spectra of the resulted marigram obtained in the proximity to Yafo contain harmonics with the frequencies very close to the measured, thus confirming the landslide nature of the tsunamigenic source responsible for generation of these high-frequency energy components. Digital records of recently measured sea water level fluctuations over a long period of time (one year and longer) at different tide gauge stations along the Israeli coast are analyzed also to determine the periods of the resonance oscillations in the vicinity of Israeli coast. A special numerical study is performed in order to provide evidence that the sea level oscillations along the shore ranging from 50 min to 60 min revealed via spectral analysis of the recent tide-gauge records are related to the continental shelf resonance.