Abstract Submitted
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Observations of water waves and wind-wave interactions in the Gulf of Aqaba (Eilat)[1] ALMOG SHANI-ZERBIB, RONI HILEL GOLDSHMID, DAN LIBERZON, Technion - Israel Institute of Technology, T-SAIL TEAM — The Gulf of Aqaba (Eilat) at the northern tip of the Red Sea has a unique elongated rectangular shape, a stable diurnal cycle of wind regime and a steady climate. The resulted wind induced wave field is heavily influenced by the topography and bathymetry of the gulf area. These conditions make the gulf area an alluring location for wind-wave interactions research. Here, we report on a first ever high-resolution observations of the water wave regimes in the Gulf of Aqaba, conducted during two short campaigns in 2017 and 2019. These include wave field measurements using a directional wave gauge array accompanied by wind velocity field measurements at several heights. High resolution measurements of the wind flow turbulent characteristics were also conducted using the newly developed combo probe, a collocated ultrasonic and hot-film anemometer, utilizing an in-situ Neural Network calibration procedure. We will report on the characteristics of the wind induced water wave fields and detail the wind-wave interaction dependence on the variations of the wind flow turbulence characteristics in terms of mean and fluctuating values. Empirical fits of the turbulent flow length scales vs. the wave field characteristics will also be presented.

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