

The surge variability and its relation to meteorological conditions at Alexandria (Egypt)

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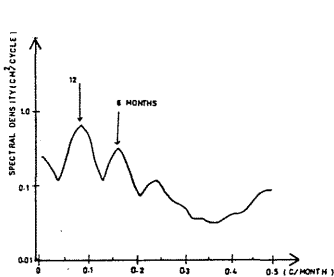
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This work presents the general meteorological conditions affecting the surge height at Alexandria. Different time scales are discussed and investigated on the basis of previous studies as well as on analysis of sea level and meteorological data in the Western Harbour. The mechanisms of surge generation in Summer and Winter storms are discussed. The monthly mean surge time series are characterized by one year cycle with high surge in Summer and low surge in Winter, this evidence was explained by the atmospheric pressure gradient in Summer as well as persistent wave action by NW winds. The daily mean surge for a year record showed decreasing spectral density from low to high frequency range with no peaks in the range of 2 to 72 days period. The conditions of occurrence of strong and moderate storm surge conditions are explained.

Some strong surge events which happens when a deep Cyclone center passes nearby the Egyptian Coastal Zone, with strong W or SW winds are described, and the number of stormy days in December, January, February and March are tabulated for the period (1974-1983), to show the probability of occurrence of storm during winter season at Alexandria.



Spectral density of monthly mean surge in the Western Harbour of Alexandria (1974-1983) with 120 data points and 30 lags.

