

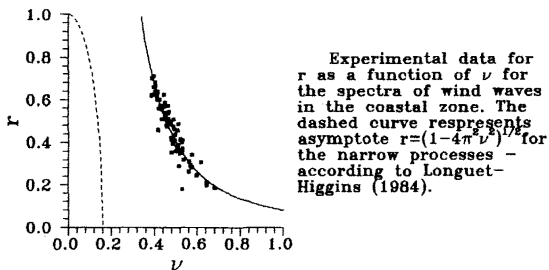
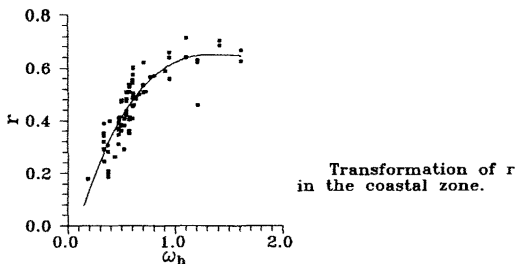
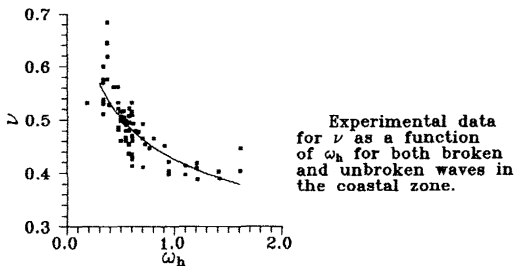
The scope of this work is to analyse experimental data on wind waves in the surf zone, in order to establish the variation of the spectral parameters on which the distribution of wave height depends. All data used here have been gathered in "WAVE'90" near-shore experiment, conducted at the Institute of Oceanology of Bulgarian Academy of Sciences.

Sea surface elevation has been measured at eleven fixed locations with a depth of 18m to 1.3m. Data have been sampled each 0.165s in a 15min period every 3 hours, corresponding to the first stages of two storms. Although there are broken waves in shallower water records, all series have been analyzed in the same manner.

TAYFUN (1990) shows that wave heights density in deep water depends on the parameter $r(\tau) = (R^2 + R^2)^{1/2} m_0^{-1}$, where $R(\tau)$ and $R(\tau)$ are an autocorrelation function and its Hilbert transformation, m_0 is rms surface elevation and τ is the half value of the mean wave period.

For narrow spectrum LONGUET-HIGGINS (1984) has obtained an approximate relation between r and ν , where ν is the dimensionless bandwidth parameter. Analysing $r(\tau)$ transformation we are able to investigate the transformation of distribution of wind wave heights. Experimental researches of $r(\tau)$ transformation in the coastal zone are unknown to us.

The above spectral characteristics are calculated for 71 recordings of elevation. Variation of r and ν is obtained in dependence of $\omega_h = \omega_p (h/g)^{1/2}$, where ω_p is the spectral peak frequency, h is the depth and g is the gravitational acceleration. The figures below demonstrate that the parameter ν becomes great and $r(\tau)$ becomes less with decreasing of the ω_h . There is a strong dependence between r and ν .



REFERENCES

LONGUET-HIGGINS M. S., 1984.- Statistical properties of wave groups: in a random sea state. *Phil. Trans. R. Soc. Lond., A* 312, 219-250.
 TAYFUN M.A., 1990.- Distribution of large wave heights. *J. Wtrway., Port, Coast., and Oc. Engrg.*, 116(6). 686-707.