

KEY TO SYMBOLS

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|------------------------------|---|--------------------|--|
| a | Scale parameter of the first-limit (Gumbel) distribution | $h_k^{(T)}$ | Estimate of k^{th} annual maximum at T-year return period |
| a_T | Scale parameter of extrapolation of the first-limit (Gumbel) distribution to a T-year return period | H | Water depth |
| b | Position parameter of the first-limit (Gumbel) distribution | $K_x(\bullet)$ | Correlation function of process x |
| b_T | Position parameter of extrapolation of the first-limit (Gumbel) distribution to T-year return period. | $m_x(\bullet)$ | Mathematical expectation of the function x |
| C_n^m | Number of combinations from n to m | $M[\bullet]$ | Operator of mathematical expectation |
| $\overline{C}, \overline{S}$ | Angular moments | $Me[\bullet]$ | Operator of median |
| c | Crest height | m_{00} | Zero – order moment of spectrum |
| c_f | Colligation coefficient | \hat{n} | Number of conditionally independent observations |
| $D_x(\bullet)$ | Variance of function x | p | Probability |
| erf | The error function | s | Scale parameter of log-normal distribution of wave heights at synoptic times |
| f | Nonlinear functional transformation | $S_x(\bullet)$ | Spectral density of process x |
| $f(\bullet)$ | Probability density function | t | Time |
| $F(\bullet), G(\bullet)$ | Distribution function | t_b | Time of storm commencement |
| $F_m(\bullet)$ | Distribution of extreme element in a sample. | t_m | Time at which maximum wave height h^+ was observed in a storm |
| $F^*(\bullet)$ | Estimate of distribution function | t_e | Time of storm end |
| $G(\bullet)$ | Quantile function, distribution function | $u(\bullet)$ | Non-dimensional deterministic impulse |
| h | Wave height (individual or recorded at a synoptic observation time) | U_p | Quantile of normal distribution $N(0,1)$ of p% probability |
| \bar{h} | Mean wave height recorded at a synoptic observation time | $w(\bullet)$ | Deterministic impulse with random parameters |
| h_s | Significant wave height recorded at a synoptic observation time | $W(\bullet)$ | Stationary random process |
| h_{\max} | Highest wave height (individual or recorded at a synoptic observation time) | Z | Threshold for wave height selection |
| h_{ws} | Wind wave height recorded at a synoptic observation time | α | Covariance function decay decrement |
| h_{sw} | Swell height recorded at a synoptic observation time | β | Direction of waves |
| h^+ | Highest wave height in a storm recorded at a synoptic observation time | δ | Skewness of a storm |
| h | Lowest wave height in weather window recorded at a synoptic observation time | Δt | Time series discretization or time step |
| h_b | Height of breaking wave | ε | White noise |
| h_p | P% quantile of wave height distribution | λ | Parameter of Poisson distribution and of storm number distribution |
| $h_{0.5}$ | Median of wave height distribution at a synoptic observation time | ρ | Correlation coefficient |
| $\bar{\bar{h}}$ | Monthly mean wave height | σ | Standard deviation, r.m.s. deviation |
| $\bar{\bar{h}}_{\max}$ | Seasonal maxima of monthly mean wave height | τ | Wave period |
| \tilde{h}_p | p% probability quantile of annual maximum distribution | $\bar{\tau}$ | Mean wave period |
| $h^{(T)}, h_{\max}^{(T)}$ | Estimated extreme wave heights at T-year return period. | τ_p | Wave period at spectral peak |
| | | \mathfrak{S} | Storm duration |
| | | φ | Latitude. |
| | | ϕ | Auto-regression parameter. |
| | | Φ | Normal (Gaussian) $N(0,1)$ distribution function |
| | | θ | Longitude |
| | | Θ | Duration of weather window |
| | | ζ, ξ, η | Centered time series |
| | | Ξ | Storm parameters ($h^+, h, \mathfrak{S}, \Theta$). |
| | | ω | Angular frequency. |
| | | $\bar{\omega}$ | Mean angular frequency. |