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Vladimir E. Zakharov* (zakharov@math.arizona.edu), Department of Mathematics,
University of Arizona, Tucson, AZ 85721, and **Roman Shamin**. *Probability of the occurrence of
freak waves.*

The statistics of the occurrence of freak waves on the surface of an ideal heavy fluid is studied. The freak (rogue, extreme) waves appear in the course of evolution of a statistically homogeneous random Gaussian wave field. The mean steepness of initial data varies from small ($\mu^2 = 1.54 \cdot 10^{-3}$) to moderate ($\mu^2 = 3.08 \cdot 10^{-3}$) values. The frequency of freak wave occurrence decreases with growth of the spectral width of initial distribution, however it remains relatively high even for the broad spectra ($\frac{\Delta_k}{k} \sim 1$). (Received February 23, 2010)