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**Rogue waves in the open ocean**

The media often present accounts of “rogue waves”, though the meaning of the term is often left undefined. Technically, the term is reserved for those waves in the tail of the probability distribution. A common definition for rogue waves defines them as waves with height $H \geq 2.2 H_s$, where the significant wave height $H_s$ is the average of the one third highest waves. Rogue waves are sometimes portrayed as “wall of water” occurring without any warning, “out of nowhere”, and sometimes as “Three sisters”, implying a build-up of large waves within a group.

I will review the physics of these large waves and present field observations and Monte-Carlo simulations of rogue waves. Based on these data dynamical and statistical explanations of rogue wave occurrence rates will be discussed, and the group structure of large waves examined. The subtle difference to the related phenomenon of “unexpected waves” will also be addressed.