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## Nonlinear focussing and shallow water (joint work with M Onorato)

Finite amplitude deep-water waves are subject to nonlinear focussing, which when the phases are right, may give rise to giant waves or freak waves. The same process is responsible for the Benjamin-Feir instability. In shallow water, finite amplitude surface-gravity waves generate a current and deviations from the mean surface elevation. This stabilizes the Benjamin-Feir instability and the process of nonlinear focussing ceases to exist when  $kh < 1.363$ . This is a well-known property of surface gravity waves (Benjamin, 1967; Whitham, 1974) and, here it is shown for the first time, that the usual starting point for wave evolution studies, namely the Zakharov equation, shares this property as well.

Consequences for (freak) wave prediction are pointed out.

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