



Modulational instability of waves under the action of wind: NLS and Jeffrey's sheltering

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We study surface waves propagating on an irrotational fluid under the action of wind, which is introduced through the Jeffrey's sheltering mechanism, modifying the dynamic boundary conditions at the free surface. We analyze the modulation of waves by an asymptotic expansion and we show that the wave envelope is governed by the Non-linear Schrödinger equation modified by a term representing energy injection from the wind into the wave. The bandwidth of unstable modes is shown to increase by this means.