

# ON THE THEORY OF MODULATIONAL INSTABILITY OF STOKES WAVES

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## S u m m a r y

We study the modulational instability of Stokes waves without the traditional assumption as to the movement of a mean flow with the group velocity of the first harmonic. We have shown that the well-known limit  $kh = 1.363$ , where  $h$  is the fluid depth and  $k$  is the wave number, for the transition between the states of modulationally stable and unstable fluids in the case of weakly nonlinear waves can be obtained without this assumption. This limit is shown to be shifted to greater  $kh$ , as the nonlinearity is strengthened. It is also shown that the disappearance of the modulational instability (restabilization) for small wave numbers of a perturbation, which was predicted on the basis of the Zakharov equations and numerical calculations of the exact equations, does not follow also from a weakly nonlinear theory, provided that the above assumption is not used.