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Faraday Waves revisited DIDIER CLAMOND, Laboratoire J.A. Dieudonné CNRS UMR 7351 Université de Nice, JEAN RAJCHENBACH, Physique de la Matière Condensée CNRS UMR 7336 Université de Nice — We revisit the theoretical description of Faraday waves. We show that, consistently with experiments, the relation of dispersion is not that of free unforced waves; the forcing amplitude and the viscosity play a significant role in the dispersion relation. We then determine the instability thresholds and the wavenumber selection in cases of both short and long waves. We also show that, depending on the depth, the instability leading to the formation can be either supercritical or subcritical, as shown by experimental observations.

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