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Experiments on breaking Faraday waves with collapsing cavity on forming crest

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We present experimental evidence that the breaking of standing surface waves generated in a rectangular tank by Faraday resonance is initiated by the collapse of a cavity on a growing wave crest. Using high-speed digital video, we observed that jet ejection from the wave crest is preceded with initiation, development and collapse of the cavity. Experimental results and analytical modelling have allowed for the assumption that the cavity is initiated by high wave nonlinearity. We find that universal power law can describe this process of cavity collapse. The present study emphasizes the importance of the initial stage of wave breaking.