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Instabilities of Stokes waves.

In the 1980s, MacKay and Saffman made a signature argument to determine when the collision of a pair of purely imaginary eigenvalues for the linear water wave problem is avoided or lead to loss of stability of a Stokes wave. I will use a spectral perturbation approach to rigorously justify this. I will discuss results from numerical computation. (Received September 25, 2017)