

# Instability and uniqueness of the peaked periodic traveling wave in the reduced Ostrovsky equation

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## Abstract

The existence of peaked periodic waves in the reduced Ostrovsky equation, a model for small-amplitude long waves in a rotating fluid, has been known since the late 1970's. In this talk I will present recent results in which we answer the long standing open question whether these solutions are stable. We prove linear instability of the peaked periodic waves using semi-group theory and energy estimates. Moreover, we prove that the peaked wave is unique and that the equation does not admit Hölder continuous solutions, i.e. there are no cusps. Finally, we show that the peaked wave is also spectrally unstable. This is joint work with Dmitry Pelinovsky.