

数学与系统科学研究院

计算数学所学术报告

报告人: **Dr. Jitse Niesen**

(*University of Leeds, United Kingdom*)

报告题目:

**Oscillons in the Faraday wave
experiment**

邀请人: 洪佳林 研究员

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下午 15:00-16:00

报告地点: 数学院南楼九层

902 报告厅

Abstract:

In the Faraday wave experiment, a fluid container is vibrated vertically. When the vibrations are sufficiently strong, waves appear on the surface of the fluid. These waves are often subharmonic, meaning that their frequency is half the frequency of the vibrations. In some cases, the waves are localized and take the shape of single peaks and craters; these are called oscillons.

I will discuss the existence of oscillons in a PDE model with single frequency time dependent forcing, which was introduced as a phenomenological model of the Faraday wave experiment. In the limit of weak damping, weak detuning, weak forcing, small group velocity, and small amplitude, the model PDE can be reduced to the coupled forced complex Ginzburg-Landau equations. These equations exhibit localized solutions and snaking behaviour which I will relate to the oscillons found numerically in model PDE.

欢迎大家参加！