

國立陽明交通大學應用數學系

學術演講公告

主講人：李俊璋教授(清華大學)

講題：A brief introduction to semiclassical analysis for
Schrödinger equations

時間：113 年 5 月 28 日(星期二) 下午 14:00 –15:00

地點：(光復校區) 科學一館 223 室

Abstract

Nonlinear Schrödinger equations are a widely studied topic due to their various applications in nonlinear optics and Bose–Einstein condensates. The semiclassical analysis serves as a link between quantum mechanics and classical mechanics, providing insight into how classical physics emerges from quantum mechanical principles, with Planck's constant playing a crucial role.

In this talk, I will first apply Madelung's transform to the Schrödinger equation and formally derive the hydrodynamic equations. Then, I will introduce a mathematical method for investigating the semiclassical limits of Schrödinger equations. The focus will be on introducing a modulated energy functional to govern mass density and linear momentum, particularly in relation to the compressible Euler equations. Finally, I will introduce my ongoing work about a nonlocal Schrödinger equation, drawing connections to a nonlocal compressible Euler equation.

敬請公告 歡迎參加

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