

# 國立清華大學數學系學術演講

## NTHU MATH Colloquium

講題 Pattern formation and feedback controls of Ginzburg-Landau spiral waves

講者 戴佳原教授 (中興應數系)

時間 2021.11.29 (Mon.) 16:00 – 17:00

地點 第三綜合大樓**2樓 Room 201** (請同學配戴口罩)

茶會 15:30, Room 707

### Abstract

Our beautiful world exhibits so many intricate spatio-temporal patterns. In particular, self-organized spiral waves have been observed in physiology, chemistry, and physics. Among various models describing spiral waves, I focus on the complex Ginzburg-Landau equation, because its gauge symmetry offers an advantage for mathematical analysis. The framework of my research is a trilogy: existence, (in-)stability, and delayed feedback stabilization. The existence and (in-)stability of spiral waves result from an analysis based on global bifurcation and a new shooting method. Then I adopt noninvasive delayed feedback controls to stabilize some unstable spiral waves.