中央研究院數學研究所

Institute of Mathematics, Academia Sinica

Taipei Postdoc Seminar

Speaker：陳彥宇 Yan-Yu Chen
(國立台灣大學 National Taiwan University)

Title：**Global Dynamics on One-dimensional Excitable Media**

Time：14:00 - 15:00, Wednesday, April 21, 2021

Venue：Lecture Hall 5F, Cosmology Building (NTU Campus) 次震宇宙館 五樓演講廳

Abstract：

The FitzHugh–Nagumo system has been studied extensively for several decades. It has been shown numerically that pulses are generated to propagate and then some of the pulses are annihilated after collision. For the mathematical understanding of these complicated dynamics, we investigate the global dynamics of a one-dimensional free boundary problem in the singular limit of a FitzHugh–Nagumo type reaction–diffusion system. By introducing the notion of symbolic dynamics, we show that the asymptotic behaviors of solutions are classified into three categories: (i) the solution converges uniformly to the resting state; (ii) the solution converges to a series of traveling pulses propagating in either the same direction or both directions; and (iii) the solution converges to a propagating wave consisting of multiple traveling pulses and two traveling fronts propagating in both directions.

This is a joint work with Professor Hirokazu Ninomiya and Professor Chang-Hong Wu.

Organizer：Wei-Bo Su (Academia Sinica), Peng-Jie Wong (National Center for Theoretical Sciences)

https://www.math.sinica.edu.tw/www/file_upload/conference/2016TPS/index.html

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