
CHUNYI GAI, University of Northern British Columbia
Pattern Formation and Spike Dynamics in the Presence of Noise

Noise plays a crucial role in the formation and evolution of spatial patterns in various reaction-diffusion systems in mathematical biology and ecology. In this talk, I give two examples where noise significantly influences spatial patterning. The first example describes how patterned states can provide a refuge and prevent extinction under stressed conditions. It also illustrates the importance of not only the absolute level of climate change, but also the speed with which it occurs. The second example studies the effect of noise on dynamics of a single spike pattern for the classical Gierer-Meinhardt model on a finite interval.