Speaker: Xuefeng Wang, Tulane University

Title:
“Stability and metastability of patterns in a nonlocal model for phase transitions”

Abstract:

Of concern is the non-local Allen-Cahn equation, where the usual Laplacian is replaced by a convolution operator. As in the case of Allen-Cahn, a typical initial value quickly evolves into a spatial pattern; on the other hand, the diffusion effect of the convolution operator is not as strong as that of Laplacian. This sometimes leads to the stability of patterns, which does not occur in Allen-Cahn. We also show that the life span of patterns depends on the decay rate of the kernel of the convolution.