

SCMS Seminar



TRANSITION WAVES OF LATTICE FISHER-KPP

EQUATIONS IN HETEROG

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Lecture

Time: 4:00-5:00 pm., Friday, Oct. 13, 2017

Venue: Room 2201, East Main Guanghua Tower, Handan Campus

Abstract: The study of front propagation dynamics of Fisher-KPP type equations with general time and/or space dependence is attracting more and more attention due to the presence of general time and space variations in real world problems. In this talk, we investigate the stability and uniqueness of transition wave solutions of lattice Fisher-KPP equations with general time and space dependence and discuss the applications on the existence, stability and uniqueness of periodic traveling wave solutions of lattice Fisher-KPP equations in time and space periodic media, and the existence, stability and uniqueness of transition wave solutions of lattice Fisher-KPP equations in time heterogeneous media. The general stability result studied here implies that the transition waves obtained in many cases are asymptotically stable under well-fitted perturbation.

$$\Delta y_i = \int_{x_i}^{x_{i+1}} y' dx$$
$$\int_{x_k}^{x_{k+1}} f(x, y) dx = \int_{x_k}^{x_{k+1}} y' dx = y(x)$$
$$-\sqrt{(y_n + 0.5\tau k_1)^2 + (t_n + 0.5\tau)^2}$$