

## ***THE DYNAMICS OF LOTKA-VOLTERRA COMPETITION- DIFFUSION-ADVECTION MODELS***

**Speaker: Zengji Du**  
**Jiangsu Normal University**

**Time: Friday, June 9, 2023, 9:00-10:00**

**Tencent room: 849-378-643      Code: 200433**

**Abstract:** In this talk, we mainly investigate a Lotka-Volterra competition-diffusion-advection system with time delay. By employing the Lyapunov-Schmidt reduction method, we obtain the existence of steady state solution. A weighted inner product has been introduced to study stability and Hopf bifurcation at the spatially nonhomogeneous steady-state. Our results imply that the time delay can make the spatially nonconstant positive steady state unstable for a reaction-diffusion-advection model. In addition, the bifurcation direction and stability of Hopf bifurcating periodic orbits was obtained by means of by the center manifold reduction and the normal form theory.