**青年学术论坛邀请报告**

报告题目：Modeling and Analysis of a Nonlinear Age-Structured Model for Tumor Cell Populations with Quiescence

报告人： 陈静 博士 (美国诺瓦东南大学)

时间： 2019年6月12日（周三）下午13：00-14：00

地点： 闵行数学楼126室

摘要: We present a nonlinear first-order hyperbolic partial differential equation model to describe age-structured tumor cell populations with proliferating and quiescent phases at the avascular stage in vitro. The division rate of the proliferating cells is assumed to be nonlinear due to the limitation of the nutrient and space. The model includes a proportion of newborn cells that enter directly the quiescent phase with age zero. This proportion can reflect the effect of treatment by drugs such as erlotinib. The existence and uniqueness of solutions are established. The local and global stabilities of the trivial steady state are investigated. The existence and local stability of the positive steady state are also analyzed. Numerical simulations are performed to verify the results and to examine the impacts of parameters on the nonlinear dynamics of the model.

报告人简介: 陈静，2015年从美国迈阿密大学（University of Miami）数学系获得应用数学博士学位，毕业后留校从事博士后研究，至2018年8月起在位于美国佛罗里达州劳德代尔堡市的诺瓦东南大学数学系工作至今。现在主持美国国家自然科学基金项目。主要研究方向是微分方程、动力系统、数学传染病学和种群生物学等，在SIAM J Appl Math、PLoS Neg Trop Dis、J Theor Biol、J Nonlinear Sci、J Dyn Differ Equ、Bull Math Biol、等权威学术期刊发表论文10多篇。

邀请人：毕平