

ROCKY MOUNTAIN JOURNAL OF MATHEMATICS

Volume 38

2008

Number 5

---

CONTENTS

Four Periodic Solutions of a Generalized Delayed Predator-Prey System on Time Scales  
BY XIAOXING CHEN AND HAIJUN GUO ..... 1307

An SIS Infection Model Incorporating Media Coverage  
BY JING-AN CUI, XIN TAO AND HUAIPING ZHU ..... 1323

Global Behavior of a Reaction-Diffusion Volterra Equation With Variable Coefficients  
BY YONG-HONG FAN AND LIN-LIN WANG ..... 1335

Permanence for Nonautonomous  $N$ -Species Lotka-Volterra Competitive Systems With Feedback Controls  
BY XIAOMEI FENG, ZHIDONG TENG AND LONG ZHANG ..... 1355

Stability Analysis of the Nonlinear Impulsive System in Microbial Fed-Batch Fermentation  
BY CAIXIA GAO AND ENMIN FENG ..... 1377

Analysis of an SEIRS Epidemic Model with Time Delays And Pulse Vaccination  
BY SHUJING GAO, LANSUN CHEN AND ZHIDONG TENG ..... 1385

Time-Limited Management Strategies of a Single-Species With Allee Effect  
BY HONGJIAN GUO, LANSUN CHEN AND XINYU SONG ..... 1403

The Analysis of Two Epidemic Models with Constant Immigration and Quarantine  
BY ZHIXING HU, YANG YU AND WANBIAO MA ..... 1421

The Effect of Constant and Mixed Impulsive Vaccination on SIS Epidemic Models Incorporating Media Coverage  
BY YONGFENG LI, CHAOQUN MA AND JINGAN CUI ..... 1437

Dynamical Behavior of an Epidemic Model with Coinfection of Two Diseases  
BY JIANQUAN LI, LADI WANG, HUIWEN ZHAO AND ZHIEN MA ..... 1457

Optimization Algorithm and its Convergence for Microbial Continuous Fermentation  
BY XIAOHONG LI, ENMIN FENG AND ZHILONG XIU ..... 1481

CONTENTS CONTINUED ON LAST PAGE

Stability of the $T$ -Periodic Solution on the ES-S Model By J.G. LIAN AND H.K. ZHANG .....	1493
Modeling and Analysis of a Delayed Competitive System With Impulsive Perturbations By ZHIJUN LIU, RONGHUA TAN AND YIPING CHEN .....	1505
Modeling Disease Spread via Transport-Related Infection By a Delay Differential Equation By JUNLI LIU, JIANHONG WU AND YICANG ZHOU .....	1525
Global Dynamics in a TB Model Incorporating Case Detection And Two Treatment Stages By LUJU LIU, YICANG ZHOU AND JIANHONG WU .....	1541
The Analysis of an HIV/AIDS Model with Vaccination By LIU MAOXING AND JIN ZHEN .....	1561
Mathematical Analysis of a Basic Virus Infection Model With Application to HBV Infection By LEQUAN MIN, YONGMEI SU AND YANG KUANG .....	1573
Waning Herd Immunity: A Challenge for Eradication of Measles By SEYED M. MOGHADAS, MURRAY E. ALEXANDER AND BENI M. SAHAI .....	1587
Permanence in Multi-Species Competitive Systems With Delays and Feedback Controls By LINFEI NIE, JIGEN PENG AND ZHIDONG TENG .....	1609
The Effect of Partial Crop Harvest on Biological Pest Control By S. NUNDLOLL, L. MAILLERET AND F. GROGNARD .....	1633
Dynamic Behaviors of a Single-Species Population Model With Birth Pulses in a Polluted Environment By FENGMEI TAO AND BING LIU .....	1663
Global Stability and Hopf Bifurcation on a Predator-Prey System With Diffusion and Delays By YUQUAN WANG .....	1685
Periodic Solutions in a Delayed Predator-Prey Model with Nonmonotonic Functional Response By LIN-LIN WANG, YONG-HONG FAN AND WEI-GAO GE .....	1705
A Stage Structured Predator-Prey Model with Time Delays By YAN WANG, JIANHONG WU AND YANNI XIAO .....	1721
A Class of Nonlinear Multistage Dynamical System and its Optimal Control By HUIYUAN WANG, ENMIN FENG AND ZHILONG XIU .....	1745

Stability and Bifurcation in a Beddington-Deangelis Type Predator-Prey Model With Prey Dispersal BY RUI XU, ZHIEN MA AND QINTAO GAN .....	1761
Global Solutions for a Tritrophic Food Chain Model with Diffusion BY FANG YANG AND SHENGMAO FU .....	1785
Simple Models for Avian Influenza BY XINGYANG YE AND XUEPENG LI .....	1813
Necessary and Sufficient Conditions for Global Attractivity of Hopfield-Type Neural Networks with Time Delays BY SHANGGUO ZHANG, WANBIAO MA AND YANG KUANG .....	1829
Dynamic Behavior of a Delayed Impulsive SEIRS Model in Epidemiology BY TAILEI ZHANG AND ZHIDONG TENG .....	1841
Maximum Likelihood Estimation for Simplex Distribution Nonlinear Mixed Models via the Stochastic Approximation Algorithm BY WENZHUAN ZHANG AND HONGJIE WEI .....	1863
Analysis of an Eco-Epidemiological Model With Time Delay BY HUI ZHU, ZUOLIANG XIONG AND XIN WANG .....	1877