



云南大学学报(自然科学版) » 2010, Vol. 32 » Issue (2): 158-162 DOI:

计算机、信息与电子科学

最新目录 | 下期目录 | 过刊浏览 | 高级检索

◀ Previous Articles | Next Articles ▶▶

规则网格中带人工免疫SIRS模型的动力学行为

张达敏¹, 蔡绍洪³, 周海平², 郭长睿¹

- 1. 贵州大学计算机科学与信息学院, 贵州贵阳 550025;
- 2. 贵阳学院计算机系, 贵州贵阳 550003;
- 3. 贵州财经学院, 贵州贵阳 550004

The dynamic behavior of SIRS model with immunization on regular lattice

ZHANG Da-min¹, CAI Shao-hong³, ZHOU Hai-ping², GUO Chang-rui¹

- 1. School of Computer Science and Information, Guizhou University, Guiyang 550025, China;
- 2. Department of Computer Science, Guiyang College, Guiyang 550003, China;
- 3. Guizhou College of Finance and Economics, Guiyang 550004, China

- 摘要
- 参考文献
- 相关文章

全文: PDF (1179 KB) HTML (1 KB) 输出: BibTeX | EndNote (RIS) 背景资料

摘要 运用平均场理论和非线性动力学方法分析规则网格中带人工免疫SIRS传播模型的动力学行为,并通过计算机模拟来研究人工免疫,群体密度以及个体游动等因素对疾病传播的影响.结果表明实施人工免疫可以有效降低系统的稳态感染比例,提高系统的传播阈值,而且在群体静止情况下的效果明显高于群体游动时的效果.与此相反,个体的随机游动会提高系统的稳态感染比例,降低系统的传播阈值.

关键词: 规则网格 SIRS模型 人工免疫 群体密度 传播效率

Abstract: According to the mean-field theory and nonlinear theory, the dynamic behavior of SIRS model with immunization on regular lattice is discussed in detail. The effects of artificial immunization, crowd density and the moving activity of individuals on disease spreading are investigated by computer simulation. The results indicate that artificial immunization can reduce the stable infective ratio and increase the threshold of epidemic spread. Furthermore, its effect in the case of static crowd is better than that of moving crowd. On the contrary, the moving activity of individuals can enhance the stable infective ratio and decrease the threshold of epidemic spread.

Key words:

收稿日期: 2009-05-12;

通讯作者: 蔡绍洪(1958-),男,贵州人,博士生导师,主要从事非线性动力学方面的研究, E-mail: aa.shcai@gzu.edu.cn.

引用本文:

张达敏,蔡绍洪,周海平等. 规则网格中带人工免疫SIRS模型的动力学行为[J]. 云南大学学报(自然科学版), 2010, 32(2): 158-162 .

\$author.xingMing_EN,\$author.xingMing_EN,\$author.xingMing_EN et al. The dynamic behavior of SIRS model with immunization on regular lattice[J]. , 2010, 32(2): 158-162 .

没有本文参考文献

没有找到本文相关文章

服务

- ▶ 把本文推荐给朋友
- ▶ 加入我的书架
- ▶ 加入引用管理器
- ▶ E-mail Alert
- ▶ RSS

作者相关文章

- ▶ 张达敏
- ▶ 蔡绍洪
- ▶ 周海平
- ▶ 郭长睿

版权所有 © 《云南大学学报(自然科学版)》编辑部

编辑出版: 云南大学学报编辑部 (昆明市翠湖北路2号, 650091)

电话: 0871-5033829(传真) 5031498 5031662 E-mail: yndxxb@ynu.edu.cn yndxxb@163.com