

## Mathematical Epidemiology [

Brauer, Fred

Springer Berlin Heidelberg, 2008

Mathematics Epidemiology Differentiable dynamical systems	
Differential Equations Genetics- Distribution (Probability theory)	
Mathematics Genetics and Population Dynamics	Ordinary Differential
Equations Dynamical Systems and Ergodic Theory	Probability Theory and
Stochastic Processes Epidemiology	

Monografía

Based on lecture notes of two summer schools with a mixed audience from mathematical sciences, epidemiology and public health, this volume offers a comprehensive introduction to basic ideas and techniques in modeling infectious diseases, for the comparison of strategies to plan for an anticipated epidemic or pandemic, and to deal with a disease outbreak in real time. It covers detailed case studies for diseases including pandemic influenza, West Nile virus, and childhood diseases. Models for other diseases including Severe Acute Respiratory Syndrome, fox rabies, and sexually transmitted infections are included as applications. Its chapters are coherent and complementary independent units. In order to accustom students to look at the current literature and to experience different perspectives, no attempt has been made to achieve united writing style or unified notation.Notes on some mathematical background (calculus, matrix algebra, differential equations, and probability) have been prepared and may be downloaded at the web site of the Centre for Disease Modeling (www.cdm.yorku.ca).

Título: Mathematical Epidemiology Recurso electrónico] edited by Fred Brauer, Pauline Driessche, Jianhong Wu

Editorial: Berlin, Heidelberg Springer Berlin Heidelberg 2008

Descripción física: digital

Mención de serie: Lecture Notes in Mathematics 0075-8434 1945

Documento fuente: Springer eBooks

**Contenido:** Part I: Introduction and General Framework -- A light introduction to modelling recurrent epidemics (David J.D. Earn) -- Compartmental models in epidemiology (Fred Brauer) -- An introduction to stochastic epidemic models (Linda J.S. Allen) -- Part II: Advanced Modeling and Heterogeneities -- An introduction to networks in epidemic modeling (Fred Brauer) -- Deterministic compartmental models: Extensions of basic models (P. van den Driessche) -- Further notes on the basic reproduction number (James Watmough and P. van den Driessche) -- Spatial structure I: Patch models (P. van den Driessche) -- Spatial structure I: Patch models (P. van den Driessche) -- Spatial structure I: Patch models (P. van den Driessche) -- Spatial structure I: Patch models (P. van den Driessche) -- Spatial structure I: Patch models (P. van den Driessche) -- Spatial structure II: Patch models (I and Fred Brauer) -- Distribution theory, stochastic processes and infectious

disease modeling (Ping Yan) -- Part III: Case Studies -- The role of mathematical models in explaining recurrent outbreaks of infectious childhood diseases (C.T. Bauch) -- Modeling influenza: Pandemics and seasonal epidemics (Fred Brauer) -- Mathematical models of influenza: The role of cross-immunity, quarantine and age structure (M. Nuno, C. Castillo (QA(B(3C (BChavez, Z. Feng, M. Martcheva) -- A comparative analysis of models for West Nile virus (Marjorie J. Wonham, Mark A. Lewis)

Restricciones de acceso: Acceso restringido a miembros del Consorcio de Bibliotecas Universitarias de Andalucía

Detalles del sistema: Modo de acceso: World Wide Web

Fuente de adquisición directa: Springer

ISBN: 9783540789116 978-3-540-78911-6 9783540789109 ed. impresa)

Autores: Driessche, Pauline Wu, Jianhong

Entidades: SpringerLink (Online service)

## **Baratz Innovación Documental**

- Gran Vía, 59 28013 Madrid
- (+34) 91 456 03 60
- informa@baratz.es