Record Nr. UNINA9910811163303321 Modeling and dynamics of infectious diseases / / editors, Zhien Ma, **Titolo** Yicang Zhou, Jianhong Wu Pubbl/distr/stampa Beijing, : Higher Education Press Singapore, : World Scientific, c2009 **ISBN** 1-282-44278-3 9786612442780 981-4261-26-2 Edizione [1st ed.] Descrizione fisica 1 online resource (355 p.) Series in contemporary applied mathematics CAM; ; 11 Collana Altri autori (Persone) MaZhien <1935-> ZhouYicang WuJianhong <1964-> Disciplina 616.9001/5118 Soggetti Communicable diseases - Epidemiology - Mathematical models Infection - Epidemiology - Mathematical models Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Description based upon print version of record. Nota di bibliografia Includes bibliographical references. Nota di contenuto Preface; Contents; Zhien Ma: Some Recent Results on Epidemic Dynamics Obtained by Our Group; Fred Brauer, Jianhong Wu: Modeling SARS, West Nile Virus, Pandemic Influenza and Other Emerging Infectious Diseases: A Canadian Team's Adventure.; Julien A rino: Diseases in Metapopulations: Fred Brauer: Modeling the Start of a Disease Outbreak; Troy Day: Mathematical Techniques in the Evolutionary Epidemiology of Infectious Diseases.; Zhilan Feng, Dashun Xu, Haiyun Zhao: The Uses of Epidemiological Models in the Study of Disease Control. John W. Glasser, Maureen Birmingham: Assessing the Burden of Congenital Rubella Syndrome and Ensuring Optimal Mitigation via Mathematical Modeling. Thanate Dhirasakdanon, Horst R. Thieme: Persistence of Vertically Transmitted Parasite Strains which Protect against More Virulent Horizontally Transmitted Strains; Ying-Hen Hsieh: Richards Model: A Simple Procedure for Real-time Prediction of Outbreak Severity.; James Watmough: The Basic Reproduction Number

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Sommario/riassunto

This book provides a systematic introduction to the fundamental methods and techniques and the frontiers of - along with many new ideas and results on - infectious disease modeling, parameter estimation and transmission dynamics. It provides complementary approaches, from deterministic to statistical to network modeling; and it seeks viewpoints of the same issues from different angles, from mathematical modeling to statistical analysis to computer simulations and finally to concrete applications.