Record Nr. UNINA9910820853203321 Dynamical modeling and analysis of epidemics / / edited by Zhien Ma **Titolo** and Jia Li Pubbl/distr/stampa New Jersey, : World Scientific, 2009 **ISBN** 1-282-44166-3 9786612441660 981-279-750-5 Edizione [1st ed.] Descrizione fisica 1 online resource (513 p.) MaZhien <1935-> Altri autori (Persone) LiJia <1974-> Disciplina 614.4/2 614.4011 Epidemiology - Mathematical models Soggetti Medical 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 and index. Nota di contenuto Preface; List of Contributors; Contents; 1. Basic Knowledge and Modeling on Epidemic Dynamics; 2. Ordinary Differential Equations Epidemic Models; 3. Modeling of Epidemics with Delays and Spatial Heterogeneity; 4. The Epidemic Models with Impulsive Effects; 5. Structured Epidemic Models; 6. Applications of Epidemic Modeling; Bibliography; Index Sommario/riassunto This timely book covers the basic concepts of the dynamics of epidemic disease, presenting various kinds of models as well as typical research methods and results. It introduces the latest results in the current literature, especially those obtained by highly rated Chinese scholars. A lot of attention is paid to the qualitative analysis of models, the sheer variety of models, and the frontiers of mathematical epidemiology. The process and key steps in epidemiological modeling and prediction are

highlighted, using transmission models of HIV/AIDS, SARS, and

tuberculosis as application examples.