Branching processes and models of epidemics

R. Bartoszyński

Publisher: Instytut Matematyczny Polskiej Akademi Nauk(Warszawa), 1969

Access Full Book

top

Access to full text

Abstract

top

CONTEXTS0. Introduction..... 5Part IMODELS OF EPIDEMICS FOli INFECTIOUS DISEASES1. Informal description of the phenomenon of epidemics and constructionof mathematical models..... 52. General characterization of the classical models of epidemics..... 63. General characterization of models based on the theory of branching processes..... 84. First group of models: geographical spread of epidemics..... 95. Second group of models: influence of changes of infectioussness on the course of epidemic..... 186. Third group of models: preventive activity of health service..... 227. Discussion..... 28Part IISPREADING OF NON-INFECTIOUS DISEASES8. Introduction..... 319. Formal presentation of the model of reproduction and inheritance of types..... 3210. Tests for detecting time-dependent inheritance mechanisms..... 3411. Possibility of estimating distributions appearing in the assumptions ofthe model..... 3712. Probability generating function of the number of offsprings of different types..... 4313. Discussion..... 44References..... 48

How to cite

top

- MLA
- BibTeX
- RIS

R. Bartoszyński. *Branching processes and models of epidemics*. Warszawa: Instytut Matematyczny Polskiej Akademi Nauk, 1969. <http://eudml.org/doc/268421>.

@book{R1969,
abstract = {CONTEXTS0. Introduction..... 5Part IMODELS OF EPIDEMICS FOli INFECTIOUS DISEASES1. Informal description of the phenomenon of epidemics and constructionof mathematical models..... 52. General characterization of the classical models of epidemics..... 63. General characterization of models based on the theory of branching processes..... 84. First group of models: geographical spread of epidemics..... 95. Second group of models: influence of changes of infectioussness on the course of epidemic..... 186. Third group of models: preventive activity of health service..... 227. Discussion..... 28Part IISPREADING OF NON-INFECTIOUS DISEASES8. Introduction..... 319. Formal presentation of the model of reproduction and inheritance of types..... 3210. Tests for detecting time-dependent inheritance mechanisms..... 3411. Possibility of estimating distributions appearing in the assumptions ofthe model..... 3712. Probability generating function of the number of offsprings of different types..... 4313. Discussion..... 44References..... 48},
author = {R. Bartoszyński},
language = {eng},
location = {Warszawa},
publisher = {Instytut Matematyczny Polskiej Akademi Nauk},
title = {Branching processes and models of epidemics},
url = {http://eudml.org/doc/268421},
year = {1969},
}

TY - BOOK
AU - R. Bartoszyński
TI - Branching processes and models of epidemics
PY - 1969
CY - Warszawa

PB - Instytut Matematyczny Polskiej Akademi Nauk
AB - CONTEXTS0. Introduction..... 5Part IMODELS OF EPIDEMICS FOli INFECTIOUS DISEASES1. Informal description of the phenomenon of epidemics and constructionof mathematical models..... 52. General characterization of the classical models of epidemics..... 63. General characterization of models based on the theory of branching processes..... 84. First group of models: geographical spread of epidemics..... 95. Second group of models: influence of changes of infectioussness on the course of epidemic..... 186. Third group of models: preventive activity of health service..... 227. Discussion..... 28Part IISPREADING OF NON-INFECTIOUS DISEASES8. Introduction..... 319. Formal presentation of the model of reproduction and inheritance of types..... 3210. Tests for detecting time-dependent inheritance mechanisms..... 3411. Possibility of estimating distributions appearing in the assumptions ofthe model..... 3712. Probability generating function of the number of offsprings of different types..... 4313. Discussion..... 44References..... 48
LA - eng
UR - http://eudml.org/doc/268421
ER -

Notes Embed ?

top

You must be logged in to post comments.

To embed these notes on your page include the following JavaScript code on your page where you want the notes to appear.

Language to use for this widget. English (en)

Only the controls for the widget will be shown in your chosen language. Notes will be shown in their authored language.

Number of notes per page 5

Tells the widget how many notes to show per page. You can cycle through additional notes using the next and previous controls.

Note: Best practice suggests putting the JavaScript code just before the closing </body> tag.

OK

Access Full Book
Abstract
How to cite
Notes

Add to Personal Lists

You must be logged in to use personal lists.

Find Similar Documents

Subjects

Suggest a Subject

You must be logged in to add subjects.

Genetics and population dynamics

92D25 Population dynamics (general)

Share this Book

On Google Scholar

Articles by R. Bartoszyński

Search for Related Content

In Other Databases

PLDML

ZBMath

Branching stochastic processes have been applied widely to model epidemic spread (see for example the monographs Daley and Gani, 1999; Andersson and Britton, 2000; Mode and Sleemam, 2000; Pakes, 2003). In terms of epidemic spreading we have drawn our attention to the SIR (susceptible–infective–removed) scheme. Measles, mumps or avian flu are examples of infectious diseases that follow this spreading scheme model. To further elucidate the method of our modeling and to make the model more realistic, later on we have considered Sevast'yanov's branching processes (SBP; see González et al., 2010b), which actually generalize BHBP. A general multitype branching process is used to model an emerging infectious disease in a population of households. It is shown that the containment probability satisfies a certain fixed point equation which has a unique solution under certain conditions; the case of multiple solutions is also described. The extinction probability of the branching process is shown to be a special case of the containment probability. It is shown that Laplace transform ordering of the severity distributions of households in different epidemics yields an ordering on the containment probabilities. Stochastic epidemic models for emerging diseases. , University of Nottingham. Recommend this journal. Email your librarian or administrator to recommend adding this journal to your organisation's collection. Start by marking "Branching Processes and Models of Epidemics " as Want to Read: Want to Read saving… Want to Read. Currently Reading. Read. Branching Processes an by Robert Bartoszynski. Other editions. Want to Read saving… Error rating book. Refresh and try again. Rate this book. Clear rating. 1 of 5 stars 2 of 5 stars 3 of 5 stars 4 of 5 stars 5 of 5 stars. Open Preview. See a Problem? We'd love your help. Let us know what's wrong with this preview of Branching Processes and Models of Epidemics by Robert Bartoszynski. Problem: It's the wrong book It's the wrong edition Other.