Título:

Autor:

Editorial:

Tema:

Sinopsis

Precio: $2646.00

Año: 2009

Edición: 1ª

ISBN: 9781441903587

Mathematical modeling in the biological sciences is growing exponentially because the general area provides exciting problems from biology to medicine, and this goes under the name mathematical biology. Moreover, models of the growth of microorganisms have become very popular since mathematical predictions can be tested in the laboratory employing a device known as the chemostat. Such models are called chemostat models. This book attempts to present a self contained account of mathematical model building theory of microbial populations.

Key Features:

Covers all fundamental concepts and mathematical skills needed to build models for microbial populations.

Provides an accessible and informative over view of known literature including several practical techniques.

Presents a comprehensive analysis of chemostat models and their limitations in adapting to natural lakes.

A thorough discussion on the design of biologically viable control mechanisms (termed bio-control mechanisms) to contain the instability tendencies.

Construction of a variety of Lyapunov functionals for global stability analysis.

This book is ideal for a general scientific and engineering audience requiring an in-depth exposure to current ideas, methods and models. The topics discussed can serve as a one to two semester course material for senior under graduate and graduate students. It is a useful reference for practitioners, researchers, and professionals in applied mathematics, biology, agriculture, limnology, chemical and civil engineering.