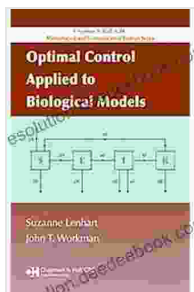


Optimal Control Applied to Biological Models: A Comprehensive Exploration by Chapman & Hall/CRC

Optimal control theory, a branch of applied mathematics, provides invaluable tools for understanding and optimizing complex biological systems. This theory aids in determining optimal strategies for controlling biological processes, from cellular dynamics to population growth and ecosystem management. In the field of mathematical and computational biology, optimal control has emerged as an essential technique for investigating and addressing real-world challenges in biomedicine, biotechnology, and ecology.

Chapman & Hall/CRC's Contribution

Chapman & Hall/CRC, a renowned publisher in scientific and technical literature, has released a comprehensive and authoritative book titled "Optimal Control Applied to Biological Models." Authored by leading experts in the field, this publication offers a thorough exploration of optimal control theory as applied to biological systems. It delves into both theoretical foundations and practical applications, providing a valuable resource for researchers, students, and practitioners alike.



Optimal Control Applied to Biological Models (Chapman & Hall/CRC Mathematical and Computational Biology Book 15) by Suzanne Lenhart

★★★★★ 5 out of 5

Language : English

File size : 6073 KB

Screen Reader : Supported

Print length : 274 pages
Hardcover : 502 pages
Item Weight : 1.58 pounds
Dimensions : 6 x 1.19 x 9 inches



Key Features of the Book

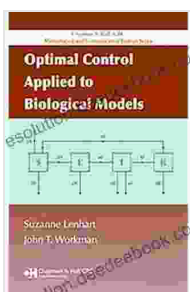
- **Comprehensive Coverage:** Encompasses a wide range of topics, including:
 - Mathematical foundations of optimal control
 - Numerical methods for solving optimal control problems
 - Applications in cell biology, physiology, ecology, and epidemiology
- **Expert Authorship:** Written by leading researchers in optimal control and mathematical biology, ensuring accuracy and depth of content.
- **Real-World Examples and Case Studies:** Illustrates the practical application of optimal control theory to diverse biological problems, fostering understanding and applicability.
- **Pedagogical Approach:** Presents the material in a clear and accessible manner, with numerous examples and exercises to enhance comprehension.

Applications in Biology

Optimal control theory has found widespread application in biological modeling, enabling scientists to optimize a variety of processes, including:

- **Drug Delivery:** Designing optimal drug administration schedules to maximize therapeutic efficacy and minimize side effects.
- **Cell Growth and Differentiation:** Controlling cell proliferation, differentiation, and apoptosis to optimize tissue engineering and regenerative medicine.
- **Epidemic Modeling:** Developing optimal strategies for controlling the spread of infectious diseases and mitigating their impact on populations.
- **Ecosystem Management:** Optimizing resource allocation and conservation efforts to preserve biodiversity and maintain ecosystem resilience.

"Optimal Control Applied to Biological Models" by Chapman & Hall/CRC is an indispensable guide for researchers, students, and practitioners in the fields of mathematical and computational biology. Its comprehensive coverage, expert authorship, and practical applications make it a valuable resource for understanding and harnessing the power of optimal control theory to address complex biological problems. This publication enriches the body of knowledge in this interdisciplinary field and contributes significantly to the advancement of biological modeling and optimization.



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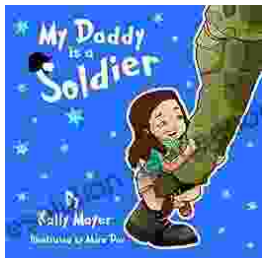
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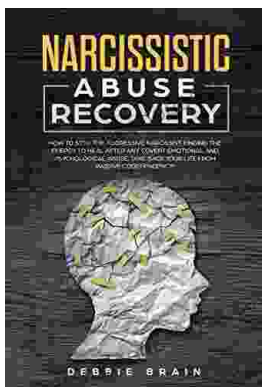
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