

*Your source for
advances in
theoretical biology
and biomathematics*

Journal of
**Mathematical
Biology**

ISSN 0303-6812

Title No. 285

Editorial Board: K. P. Hadeler, Tübingen; S. A. Levin, Ithaca (Managing Editors); H. T. Banks, Providence; J. D. Cowan, Chicago; J. Gani, Santa Barbara; F. C. Hoppensteadt, East Lansing; D. Ludwig, Vancouver; J. D. Murray, Oxford; T. Nagylaki, Chicago; L. A. Segel, Rehovot

For mathematicians and biologists working in a wide variety of fields – genetics, demography, ecology, neurobiology, epidemiology, morphogenesis, cell biology – the **Journal of Mathematical Biology** publishes:

- papers in which mathematics is used for a better understanding of biological phenomena
- mathematical papers inspired by biological research, and
- papers which yield new experimental data bearing on mathematical models.

The following selection of articles from recent issues reflects the **Journal of Mathematical Biology's** range and scope:

S. J. Merrill: Stochastic models of tumor growth and the probability of elimination by cytotoxic cells. – *H. Aagaard-Hansen, G. F. Veo:* A stochastic discrete generation birth, continuous death population growth model and its approximate solution. – *M. Weiss:* A note on the role of generalized inverse Gaussian distributions of circulatory transit times in pharmacokinetics. – *S. Ellner:* Asymptotic behavior of some stochastic difference equation population models. – *O. Diekmann, H. J. A. M. Heijmans, H. R. Thieme:* On the stability of the cell size distribution. – *A. Hunding:* Bifurcations of nonlinear reaction-diffusion systems in oblate spheroids. – *W. L. Keith, R. H. Rand:* 1:1 and 2:1 phase entrainment in a system of two coupled limit cycle oscillators. – *W. Strittmatter, J. Honerkamp:* Fibrillation of a cardiac region and the tachycardia mode of a two oscillator system. – *V. Comincioli, A. Torelli, C. Poggese, C. Reggiani:* A four-state cross bridge model for muscle contraction. Mathematical study and validation. – *H. R. Gregorius:* Convergence of genotypic frequencies for differential selfing and positive assortative mating at a biallelic locus. – *J. B. Keller:* Genetic variability due to geographic inhomogeneity.

Subscription information:

To enter your subscription, or to request sample copies, contact Springer-Verlag, Dept. ZSW, Heidelberger Platz 3, D-1000 Berlin 33, W. Germany

Springer-Verlag
Berlin Heidelberg New York
London Paris Tokyo

Springer



Bio- mathematics

Managing Editor: S. A. Levin

Editorial Board: M. Arbib,
H. J. Bremermann, J. Cowan,
W. M. Hirsch, J. Karlin,
J. Keller, K. Krickeberg,
R. C. Lewontin, R. M. May,
J. D. Murray, A. Perelson,
T. Poggio, L. A. Segel

Volume 17

Mathematical Ecology

An Introduction

Editors: T. G. Hallam, S. A. Levin

1986. 84 figures. XII, 457 pages. ISBN 3-540-13631-2

Contents: Introduction. – Physiological and Behavioral Ecology. – Population Ecology. – Communities and Ecosystems. – Applied Mathematical Ecology. – Author Index. – Subject Index.

Volume 16

Complexity, Language, and Life: Mathematical Approaches

Editors: J. L. Casti, A. Karlqvist

1986. XIII, 281 pages. ISBN 3-540-16180-5

Contents: Allowing, forbidding, but not requiring: a mathematic for human world. – A theory of stars in complex systems. – Pictures as complex systems. – A survey of replicator equations. – Darwinian evolution in ecosystems: a survey of some ideas and difficulties together with some possible solutions. – On system complexity: identification, measurement, and management. – On information and complexity. – Organs and tools; a common theory of morphogenesis. – The language of life. – Universal principles of measurement and language functions in evolving systems.

Volume 15

D. L. DeAngelis, W. M. Post, C. C. Travis

Positive Feedback in Natural Systems

1986. 90 figures. XII, 290 pages. ISBN 3-540-15942-8

Contents: Introduction. – The Mathematics of Positive Feedback. – Physical Systems. – Evolutionary Processes. – Organisms Physiology and Behavior. – Resource Utilization by Organisms. – Social Behavior. – Mutualistic and Competitive Systems. – Age-Structured Populations. – Spatially Heterogeneous Systems: Islands and Patchy Regions. – Spatially Heterogeneous Ecosystems; Pattern Formation. – Disease and Pest Outbreaks. – The Ecosystem and Succession. – Appendices. – References. – Subject Index. – Author Index.

Springer-Verlag
Berlin Heidelberg New York
London Paris Tokyo

Springer

