

***From finite to infinite dimensional dynamical  
systems***

Edited by: Robinson, J.C. and Glendinning, P.A.

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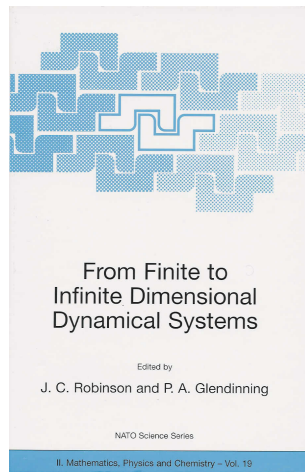
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 eds. J.C. Robinson and P.A. Glendinning

The central theme of this book is how ideas familiar from finite dimensional dynamical systems may be used in the study of infinite dimensional dynamical systems, such as partial differential equations. After an introduction to the study of partial differential equations from the perspective of dynamical systems, some of the ideas are applied to the equations of fluid dynamics and the application of low-dimensional models of turbulence. A discussion of chaos in lattice dynamical systems (for which the spatial dimension is discrete) is followed by the use of such models in biology. The book provides an introduction to a range of new techniques and applications in dynamics and will interest any graduate student starting work in the area, as well as more experienced scientists and mathematicians keen to extend their knowledge.

This book contains the following papers:

- Spatial correlations and local fluctuations in host-parasite models, M.J. Keeling & D.A. Rand
- Lattice dynamical systems, L.A. Bunimovich (assisted by C. Giberti)
- Attractors and dynamics in partial differential equations, J.K. Hale
- Nonlinear dynamics of extended systems, P. Collet
- Three lectures on mathematical fluid mechanics, P. Constantin
- Low-dimensional models of turbulence, P.J. Holmes, J.C. Mattingly, & R.W. Wittenberg