

Wainwright, J. (ed.); Ellis, G. F. R. (ed.)

Dynamical systems in cosmology. 1st paperback printing. (English) Zbl 1072.83002

Cambridge: Cambridge University Press (ISBN 0-521-67352-6/pbk; 0-521-55457-8/hbk). xiv, 343 p. (2005).

The present book is an unchanged paperback reprint from the hardbound book published in 1997. One of the book reviews to it appeared in [*A. Coley*, *Gen. Relativ. Gravit.* 32, 2353 (2000)]. Among the six printed pages of that book review one can read: "This book is an excellent introduction to the application of modern dynamical systems theory to the study of cosmological models, and is at an appropriate level for new graduate students."

The contents is as follows: Preface; 1. The geometry of cosmological models, G. F. R. Ellis, S. T. C. Siklos and J. Wainwright; 2. Friedmann-Lemaître universes, G. F. R. Ellis and J. Wainwright; 3. Cosmological observations, G. F. R. Ellis and J. Wainwright; 4. Introduction to dynamical systems, R. Tavakol; 5. Qualitative analysis of Bianchi cosmologies, G. F. R. Ellis, C. Uggla and J. Wainwright; 6. Bianchi cosmologies: non-tilted class A models, J. Wainwright; 7. Bianchi cosmologies: non-tilted class B models, C. G. Hewitt and J. Wainwright; 8. Bianchi cosmologies: extending the scope, C. G. Hewitt, C. Uggla and J. Wainwright; 9. Exact Bianchi cosmologies and state space, C. G. Hewitt, S. T. C. Siklos, C. Uggla and J. Wainwright; 10. Hamiltonian cosmology, C. Uggla; 11. Deterministic chaos and Bianchi cosmologies, D. W. Hobill; 12. G2 cosmologies, C. G. Hewitt and J. Wainwright; 13. Silent universes, M. Bruni, S. Matarrese and O. Pantano; 14. Cosmological density perturbations, P. K. S. Dunsby; 15. Overview, G. F. R. Ellis and J. Wainwright; References; Index.

It differs from many other collections written by several contributors by a very good homogeneity of the material, including one common reference list.

Reviewer: [Hans-Jürgen Schmidt \(Potsdam\)](#)

MSC:

- 83-06 Proceedings, conferences, collections, etc. pertaining to relativity and gravitational theory
- 83F05 Relativistic cosmology
- 37-06 Proceedings, conferences, collections, etc. pertaining to dynamical systems and ergodic theory
- 00B15 Collections of articles of miscellaneous specific interest
- 85A40 Astrophysical cosmology

Cited in **3** Reviews
Cited in **159** Documents

Keywords:

[Bianchi model](#); [density perturbation](#); [observation](#)

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