

The Structure and Interpretation of Cosmology

McCabe, Gordon (2003) The Structure and Interpretation of Cosmology.

This is the latest version of this eprint.

Full text available as:

[PDF](#) - Requires a viewer, such as [Adobe Acrobat Reader](#) or other PDF viewer.

Abstract

The purpose of this paper is to review, clarify, and critically analyse modern mathematical cosmology. The emphasis is upon the mathematical structures involved, rather than numerical computations. The opening section reviews and clarifies the Friedmann-Robertson-Walker models of General Relativistic Cosmology, while Section 2 deals with the spatially homogeneous models. Particular attention is paid to the topological and geometrical aspects of these models. Section 3 explains how the mathematical formalism can be linked with astronomical observation. Sections 4 and 5 provide a critical analysis of Inflationary Cosmology and Quantum Cosmology, with particular attention to the claims made that these theories can explain the creation of the universe.

Keywords: Cosmology Inflation Quantum Creation Geometry Topology Space Time Astronomy Colour

[General Issues: Structure of Theories](#)

[Specific Sciences: Physics: Cosmology](#)

Subjects: [Specific Sciences: Mathematics](#)

[General Issues: Theory/Observation](#)

[Specific Sciences: Physics: Relativity Theory](#)

ID Code: 1507

Deposited By: [McCabe, Gordon](#)

Deposited On: 04 December 2003

Available Versions of this Item

- The Structure and Interpretation of Cosmology (deposited 04 December 2003) [**Currently Displayed**]