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Nota di contenuto	CONTENTS; I INTRODUCTION; I.1 Three Dimensional Gravity; I.2 Two Dimensional Gravity; References for Chapter I; II THE ASYMPTOTIC STRUCTURE OF THREE DIMENSIONAL GRAVITY; II.1 Introduction; II.2 Solutions To Three Dimensional Gravity With < 0; II.3 Global Charges and the RxSO(2) Asymptotic Symmetries; II.4 The Conformal Group Of Asymptotic Symmetries; IV.5 The Canonical Realization Of Asymptotic Symmetries; II. Appendix 1: The Initial Value Problem; II. Appendix 2: The Lie and Surface Deformation Algebras; References for Chapter II; III BL.ACK HOLES IN TWO SPACETIME DIMENSIONS III.1 Point Sources in Two Dimensional GravityIII.2 Black Hole Solutions; References for Chapter III; IV NEUTRALIZATION OF THE COSMOLOGICAL CONSTANT IN TWO SPACETIME DIMENSIONS; IV.I Introduction; IV.1a. Particle creation.; IV.1b. Neutralization of the cosmological constant.; IV.1c. Additional features of particle creation.; IV.1d. Overview.; IV.2 Pair Creation Without Gravity; IV.2a. Lorentzian solutions.; IV.2b.

Instantons.; IV.2c. Action and probability.; IV.3 Adding Gravity; IV.3a. The gravitational equation.; IV.3b. Geometry of the instantons.; IV.4 Instantons For Pair Creation
IV..4a. Solving the equations.IV.4b. Interpretation.; IV.5 The Gravitational Action; IV.5a. Coordinate invariance.; IV.5b. Surface terms.; IV.6 Probability For Particle Creation; IV.6a. Type 1 instantons.; IV.6b. Topology change.; IV.6c. Dependence on m and e.; IV.7 The Cosmological Constant; IV.7a. Evolution from de Sitter spacetime.; IV. 7b. Evolution to (nearly) flat spacetime.; IV.8 Membrane Creation In Four Dimensions; IV.8a. Four dimensional generalization.; IV.8b. Instantons.; IV.8c. Probability.; IV.8d. Neutralizing the cosmological constant.; References for Chapter IV

Sommario/riassunto

This book addresses the subject of gravity theories in two and three spacetime dimensions. The prevailing philosophy is that lower dimensional models of gravity provide a useful arena for developing new ideas and insights, which are applicable to four dimensional gravity. The first chapter consists of a comprehensive introduction to both two and three dimensional gravity, including a discussion of their basic structures. In the second chapter, the asymptotic structure of three dimensional Einstein gravity with a negative cosmological constant is analyzed. The third chapter contains a treatment