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Nota di contenuto	Intro -- THEORETICAL PHYSICS RESEARCH DEVELOPMENTS -- THEORETICAL PHYSICS RESEARCH DEVELOPMENTS -- CONTENTS -- PREFACE -- COMMENTARY ON THE PRIOR ERRORS FOR CONSERVATION OF MOMENTUM -- 1. Foreword and Problem Statement -- 2. Comprehensive Derivation of Conservation Equation for Momentum on A Fluid Element -- Symbols and Notation -- DARK ENERGY AS THE SOURCE OF THE TIME DEPENDENT EINSTEIN COSMOLOGICAL CONSTANT -- Abstract -- Introduction -- 1. Universal Relaxation Processes -- 2. Time Dependent Cosmological Constant -- References -- NON-LINEAR REFRACTIVE INDEX THEORY: I- GENERALIZED OPTICAL EXTINCTION THEORY AND DISPERSION RELATIONS -- Abstract -- 1.Introduction -- 2.ModelEquations -- 3. GeneralizedOpticalExtinctionTheorem -- 4. OpticalBistabilityintheSmallDensityLimit -- Summary -- AppendixA -- References -- QUANTUM COHERENCE AND TUNABLE TRANSIENT BEHAVIOR OF A DOUBLE-CONTROL FOUR-LEVEL ATOMIC VAPOR -- Abstract -- 1.Introduction -- 2.Double- ControlAtomicSystemandItsSteadyOpticalBehavior -- 3. QuantumInterferencesintheFour-LevelSystem -- 4. TheTunableTransientEvolutionalBehavior: ConstructiveandDestructiveInterferences -- 5. ApplicationstothePhotonicLogicGatesandOpticalSwitches -- 6. ConcludingRemarks -- Acknowledgment -- References --

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This book presents and discusses current research developments in the study of theoretical physics. Topics discussed include dark energy as the source of the time-dependent Einstein cosmological constant; non-linear refractive index theory; and quantum coherence and tuneable transient behaviour of a double- control four-level atomic vapour.

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