1. Record Nr. UNISA996466705203316

Titolo	Birth of the Universe and Fundamental Physics [[electronic resource]] : Proceedings of the International Workshop Held in Rome, Italy, 18–21 May 1994 / / edited by Franco Occhionero
Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 1995
ISBN	3-540-49406-5
Edizione	[1st ed. 1995.]
Descrizione fisica	1 online resource (XV, 392 p.)
Collana	Lecture Notes in Physics, , 0075-8450 ; ; 455
Disciplina	530.1
Soggetti	Gravitation Elementary particles (Physics) Quantum field theory Observations, Astronomical Astronomy—Observations Astrophysics Geophysics Quantum physics Classical and Quantum Gravitation, Relativity Theory Elementary Particles, Quantum Field Theory Astronomy, Observations and Techniques Astrophysics and Astroparticles Geophysics/Geodesy Quantum Physics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di contenuto	Wave function of the universe and particle physics -- Gravitational topological charge -- Cosmological principle and the debate about large scale structures distribution -- Statistics of cosmological inhomogeneities -- The potential of potential reconstruction -- Naturalness of inflation -- Inflation and gravitational waves -- Stationary Universe Model: Inputs and Outputs -- The inflationary role of the dilaton in string cosmology -- String cosmology --

Multidimensional cosmological models: Classical and quantum solutions -- Semiclassical equations for homogeneous cosmologies with perturbations -- Nöther symmetries and exact solutions -- Thermodynamics of solitons -- A Schrödinger equation for quantum universes -- Cosmic time machines -- First post inflationary particles equation of state -- Thermal quantum corrections to (Anti) de Sitter geometry -- Primordial non-gaussian signatures in the sky -- Quantum diffusion of planck mass and the evolution of the universe -- Billiard representation for multidimensional quantum cosmology near the singularity -- Connecting inflation to observations -- False vacuum chaotic Inflation: The new paradigm? -- Comments on standard cosmology -- Emergence of classical geometry in quantum cosmology -- Non-linear relativistic evolution of cosmological perturbations in irrotational dust -- Observing cosmic strings through their lensing properties -- Scalar-tensor theories with generalized dilaton couplings -- Long-range energy and momentum transfer in the Quark-Hadron Phase Transition -- Exact solutions for cosmological perturbations with collisionless matter -- First-order inflation in general relativity -- Beyond direct hierarchical clustering -- Evidence that gamma-ray bursts repeat and are Galactic in origin -- Quasars and large scale structure of the universe -- Primordial perturbation spectra with broken scale invariance and comparison with observations -- Mixed cold-hot dark matter model with a falling initial perturbation spectrum -- Voids and adhesion theory -- The current status of late time phase transition models -- Primary anisotropy detections in the cosmic microwave background -- COBE observations of the Big Bang -- The COBRAS/SAMBA mission -- Cosmic strings confront COBE -- Beyond the central limit theorem -- Using the equation of hydrostatic equilibrium for the determination of galaxy clusters masses -- The cluster distribution as a test for dark matter models -- Kurtosis of cosmological density and velocity fields -- CMBR polarization from gravitational waves -- Hamilton-Jacobi theory and the Zel'dovich approximation -- The effect of gravitational lensing on observations of the CMBR -- Angular momentum redistribution in remnants of merger of galaxies -- Galaxy surveys and dark matter models: The statistics of voids -- X-ray data vs. galaxy velocity dispersions in galaxy clusters -- Gravitational microlensing by halo dark matter -- Merging rates inside large scale structures -- The environment of local AGNs -- A comparison of approximations to gravitational instability -- Primordial molecules in the collapse phase of a protocloud -- The least-action approach to gravitational instability -- Stochastic aggregation model for the multifractal distribution of matter -- The theory of everything vs the theory of anything -- Baryogenesis in brief -- The complex scalar field, instantons and inflationary universes -- Cosmoparticle physics of family symmetry breaking -- Recent progress in inflationary cosmology -- Black holes, wormholes, and time machines -- Concluding Remarks.

Sommario/riassunto

The articles collected in this volume cover topics ranging from Planck-scale physics to galaxy clustering. They deal with various new ideas from cosmology, astrophysics and particle physics that might lead to a better understanding of our physical universe. Among the topics covered are inflationary models, nucleosynthesis, dark matter, large-scale clustering, cosmic microwave background radiations and more. The book addresses researchers but it also gives a good overview of the subject for graduate students in astrophysics and particle physics.