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Autore	Hong Soon-Tae
Titolo	BRST Symmetry and de Rham Cohomology [[electronic resource] /] / by Soon-Tae Hong
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ISBN	981-9709-60-1
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Descrizione fisica	1 online resource (XII, 244 p. 4 illus.)
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Soggetti	Elementary particles (Physics) Quantum field theory Mathematical physics Nuclear physics Elementary Particles, Quantum Field Theory Mathematical Physics Mathematical Methods in Physics Nuclear Physics
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Nota di contenuto	Introduction -- Hamiltonian Quantization with Constraints -- BRST Symmetry in Constrained Systems -- Symplectic Embedding and Hamilton-Jacobi Quantization -- Hamiltonian Quantization and BRST Symmetry of Soliton Models -- Hamiltonian Quantization and BRST Symmetry of Skyrmion Models -- Hamiltonian Structure of Other Models -- Phenomenological Soliton -- De Rham Cohomology in Constrained Physical System -- Soliton Model in Hypersphere Geometry -- Massive Photon Phenomenology in Stringy Photon Model -- Anti-photon in Dirac Type Relativistic Quantum Mechanics for Massive Photons -- A SU(3) Clebsch-Gordan Series 835.
Sommario/riassunto	This book provides an advanced introduction to extended theories of quantum field theory and algebraic topology, including Hamiltonian quantization associated with some geometrical constraints, symplectic embedding and Hamilton-Jacobi quantization and Becchi-Rouet-Stora-Tyutin (BRST) symmetry, as well as de Rham cohomology. This extended new edition offers a multifaced insight into phenomenology

of particles such as baryons and photons, in terms of extended objects. In particular, in the second edition, the baryons are described in hypersphere soliton model, and the photon properties are additionally included in stringy photon model and in Dirac type relativistic quantum mechanics for a photon. It offers a critical overview of the research in this area and unifies the existing literatures, employing a consistent notation. Although the results presented apply in principle to all alternative quantization schemes, special emphasis is placed on the BRST quantization and its de Rham cohomology group which contribute to a deep understanding of constrained physical theories. The book describes how solitons and other models subject to constraints include rigorous treatments of the geometrical constraints which affect the predictions themselves. The book is intended for use by any graduate-level student with quantum field and relativity theories, and it also serves as a useful reference for those working in the field. An extensive bibliography guides the reader toward the source literature on particular topics.