

1. Record Nr.	UNINA9910799248803321
Titolo	Trails in Modern Theoretical and Mathematical Physics : A Volume in Tribute to Giovanni Morchio // edited by Andrea Cintio, Alessandro Michelangeli
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2023
ISBN	3-031-44988-6
Edizione	[1st ed. 2023.]
Descrizione fisica	1 online resource (XIII, 320 p. 15 illus., 10 illus. in color.)
Disciplina	530
Soggetti	Mathematical physics Quantum theory Particles (Nuclear physics) Quantum field theory Mathematical Methods in Physics Theoretical, Mathematical and Computational Physics Quantum Physics Elementary Particles, Quantum Field Theory
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	A. Introduction: "Giovanni Morchio and his role as a Physicist, Mathematician, Teacher ,Scientist" -- B. Scientific Part -- Euclidean Quantum Field Theory: A Modern Mathematical Retrospective -- Deformed Canonical Commutation Relations and Weak Eigenstates of Number-Like Operators -- Grassmannian and Chiral Anomaly -- Local Gauge Fields Recovered from GaugeInvariant Local Observables -- Relativistic Newtonian Gravitation -- Retrospective on Constructive Quantum Field Theory from the 1970s to Nowadays -- Asymptotic Abelianness and Braided Tensor C*-Categories -- Spectral Stochastic Processes in Quantum Mechanics -- Infrared Problem and Spontaneous Breaking of the Lorenz Group in QED -- Determinants, Manifolds with Boundary, and Dirac Operators. Symmetry Breaking in Classical and Quantum Systems -- C. Tribute and IN MEMORIAM Part.
Sommario/riassunto	This book celebrates the life and work of the late Giovanni Morchio

(1948–2021). It features scientific and anecdotal contributions written by his former colleagues, co-authors, and students, as well as senior scientists who were active witnesses to the dramatic advances in physics and in mathematics that took place during his 50-year-long career. The volume begins with a biographical introduction, detailing Giovanni Morchio's life and his role as a physicist, mathematician, teacher, and scientist. The core of the book covers a vast spectrum of ideas, reflecting Dr Morchio's scientific interests. Each chapter develops a specific topic of modern research, ranging from quantum mechanics and quantum field theory to additional themes such as the connection between general relativity and Newtonian gravitation. Every contribution provides a historical retrospective, a survey of advances, an outlook of future perspectives and challenges, and an updated bibliography. The last part collects the authors' recollections of their professional and personal interactions with Dr Morchio, in recognition of his deep achievements, his exceptional pedagogical qualities, and his praiseworthy social and pro bono commitment. Authored by physicists of international calibre covering a broad range of subjects, the book will be a valuable reference for researchers and students of theoretical and mathematical physics.
