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Titolo	An Introduction to C-Algebras and Noncommutative Geometry / / by Heath Emerson
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ISBN	9783031598500 9783031598494
Edizione	[1st ed. 2024.]
Descrizione fisica	1 online resource (548 pages)
Collana	Birkhäuser Advanced Texts Basler Lehrbücher, , 2296-4894
Disciplina	512.55
Soggetti	K-theory Topology Geometry, Differential Dynamics Functional analysis K-Theory Differential Geometry Dynamical Systems Functional Analysis C*-àlgebres Geometria diferencial no commutativa Teoria espectral (Matemàtica) K-teoria Teoria de l'índex (Matemàtica) Llibres electrònics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	An introduction to C*-algebras -- An Introduction to Index Theory and Noncommutative Geometry -- Spectral Theory and Representation -- Positivity, Representations, Tensor Products and Ideals in C*-algebras -- Module theory of C*-algebras -- Morita Equivalence -- Topological K-theory and Clifford Algebras -- K-theory for C*algebras -- The Index Theorem of Atiyah and Singer -- K-homology and

	Noncommutative Geometry -- An Introduction to KK-theory -- Bibliography.
Sommario/riassunto	This is the first textbook on C*-algebra theory with a view toward Noncommutative Geometry. Moreover, it fills a gap in the literature, providing a clear and accessible account of the geometric picture of K-theory and its relation to the C*-algebraic picture. The text can be used as the basis for a graduate level or a capstone course with the goal being to bring a relative novice up to speed on the basic ideas while offering a glimpse at some of the more advanced topics of the subject. Coverage includes C*-algebra theory, K-theory, K-homology, Index theory and Connes' Noncommuntative Riemannian geometry. Aimed at graduate level students, the book is also a valuable resource for mathematicians who wish to deepen their understanding of noncommutative geometry and algebraic K-theory. A wide range of important examples are introduced at the beginning of the book. There are lots of excellent exercises and any student working through these will benefit significantly. Prerequisites include a basic knowledge of algebra, analysis, and a bit of functional analysis. As the book progresses, a little more mathematical maturity is required as the text discusses smooth manifolds, some differential geometry and elliptic operator theory, and K-theory. The text is largely self-contained though occasionally the reader may opt to consult more specialized material to further deepen their understanding of certain details.