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Nota di contenuto	Delone sets and dynamical systems -- Introduction to hierarchical tiling dynamical systems -- S-adic sequences : dynamics, arithmetic, and geometry -- Operators and Algebras for Aperiodic Tilings -- From games to morphisms -- The Undecidability of the Domino Problem -- Renormalisation for block substitutions -- Yet another characterization of the Pisot conjecture.
Sommario/riassunto	This book presents a panorama of recent developments in the theory of tilings and related dynamical systems. It contains an expanded version of courses given in 2017 at the research school associated with the Jean-Morlet chair program. Tilings have been designed, used and studied for centuries in various contexts. This field grew significantly after the discovery of aperiodic self-similar tilings in the 60s, linked to the proof of the undecidability of the Domino problem, and was driven futher by Dan Shechtman's discovery of quasicrystals in 1984. Tiling problems establish a bridge between the mutually influential fields of geometry, dynamical systems, aperiodic order, computer science, number theory, algebra and logic. The main properties of tiling dynamical systems are covered, with expositions on recent results in self-similarity (and its generalizations, fusions rules and S-adic systems), algebraic developments connected to physics, games and undecidability questions, and the spectrum of substitution tilings.