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Sommario/riassunto	How can we reconcile general relativity with quantum mechanics? One promising approach is the holographic principle, which posits that quantum gravity can be described by a lower-dimensional theory without gravity. This book advances the field of discrete holography by building models on discretizations of hyperbolic space, extending the AdS/CFT correspondence and enabling experimental tests of holographic predictions. The first part develops discrete bulk models on hyperbolic tilings, exploring scalar field instability and correlation functions, and proposes electric circuits as experimental platforms. The second part constructs boundary theories as disordered spin chains and analyzes their entanglement via tensor networks. The final part investigates quantum information measures—circuit complexity, geometric quantum discord, and operator algebras—to probe black

hole properties in holographic dualities. This work uncovers new insights into holography and bridges theoretical concepts with experimental realizations. About the author Pablo Basteiro holds a Ph. D. in theoretical physics from the Julius-Maximilians University of Würzburg, specializing in discrete holography and the AdS/CFT correspondence. His research explores discrete holographic dualities using hyperbolic tilings, linking quantum information theory, high-energy physics, and potential experimental tests of holography. He now works as a quantitative consultant, applying his analytical skills to data analysis and modeling.