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	Titolo	Combinatorial Aspects of Scattering Amplitudes [[electronic resource]] : Amplituhedra, T-duality, and Cluster Algebras / / by Matteo Parisi
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	Nota di contenuto	1. Introduction -- 2. The Amplituhedron -- 3. The Hypersimplex -- 4. T-duality: the Hypersimplex VS the Amplituhedron -- 5. Positroid Triangulations -- 6. The Momentum Amplituhedron -- 7. Cluster Algebras and Amplituhedra -- 8. Conclusions.
	Sommario/riassunto	This book is a significant contribution within and across High Energy Physics and Algebraic Combinatorics. It is at the forefront of the recent paradigm shift according to which physical observables emerge from geometry and combinatorics. It is the first book on the amplituhedron, which encodes the scattering amplitudes of N=4 Yang-Mills theory, a cousin of the theory of strong interactions of quarks and gluons. Amplituhedra are generalizations of polytopes inside the Grassmannian, and they build on the theory of total positivity and oriented matroids. This book unveils many new combinatorial structures of the amplituhedron and introduces a new important related object, the momentum amplituhedron. Moreover, the work pioneers the connection between amplituhedra, cluster algebras and

tropical geometry. Combining extensive introductions with proofs and examples, it is a valuable resource for researchers investigating geometrical structures emerging from physics for some time to come.