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Nota di contenuto	1. Opening remarks; 2. A heavy ion phenomenology primer; 3. Results from lattice QCD at nonzero temperature; 4. Introducing the gauge/string duality; 5. A duality toolbox; 6. Bulk properties of strongly coupled plasma; 7. From hydrodynamics for far-from-equilibrium dynamics; 8. Probing strongly coupled plasma; 9. Quarkonium mesons in strongly coupled plasma; 10. Concluding remarks and outlook; Appendixes; References; Index.
Sommario/riassunto	Heavy ion collision experiments recreating the quark-gluon plasma that filled the microseconds-old universe have established that it is a nearly perfect liquid that flows with such minimal dissipation that it cannot be seen as made of particles. String theory provides a powerful toolbox for studying matter with such properties. This book provides a comprehensive introduction to gauge/string duality and its applications to the study of the thermal and transport properties of quark-gluon plasma, the dynamics of how it forms, the hydrodynamics of how it flows, and its response to probes including jets and quarkonium mesons. Calculations are discussed in the context of data from RHIC and LHC and results from finite temperature lattice QCD. The book is an ideal reference for students and researchers in string theory,

quantum field theory, quantum many-body physics, heavy ion physics  
and lattice QCD.

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