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**Quark-Gluon Plasma in QCD, at RHIC, and in String Theory**

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The realization that the high temperature phase of QCD is quark-gluon plasma, with properties qualitatively distinct from those of the hadronic phase whose quasi-particles make up the quotidian world, goes back more than 30 years. Over that time, we have gained reliable insight into the thermodynamics of quark-gluon plasma at accessible temperatures from lattice QCD calculations, and we have understood much about its dynamics in the high temperature limit where it becomes weakly coupled. However, in the last five years experimental discoveries at the Relativistic Heavy Ion Collider have taught us that, at least at temperatures within a factor of two of that at which hadrons ionize, the dynamics of quark-gluon plasma is closer to the ideal liquid limit than to the ideal gas limit. These experimental data demand a theoretical understanding of the dynamics of strongly coupled quark-gluon plasma. Such calculations in QCD itself are in their infancy, but string theory provides us with robust tools for exactly this purpose, applicable to the quark-gluon plasmas of many QCD-like theories. I will describe some of the many new results obtained recently from these AdS/CFT calculations, qualitative insights already in hand, prospects for quantitative insights for those properties that turn out to be universal across many different strongly interacting quark-gluon plasmas, and the interplay with near-future data expected from RHIC and from the LHC heavy ion program.