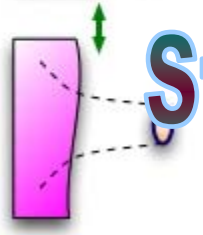
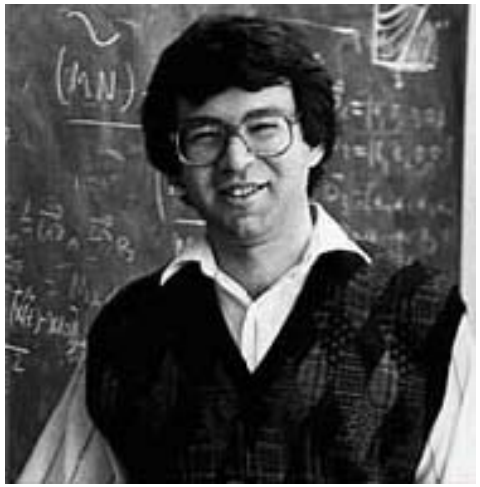
CU Physics Department Colloquium

Monday, February 21, 2011 4:10 PM 428 Pupin Hall



String Theory and Strong Interactions

String theory was originally invented to describe hadrons, but soon after Quantum Chromodynamics (QCD) emerged as the precise theory of the strong nuclear force. A quarter century later it was understood that string theory and certain gauge theories akin to QCD are in fact different descriptions of the same physics. I will review some of the basic relations between gauge theories and strings, and will motivate the exact gauge/string dualities by studying coincident D-branes. I will also discuss applications of these ideas to theories at finite temperatures and to theories which exhibit color confinement. The colloquium will also cover some of the recent progress, including calculation of the quantum entanglement entropy, understanding the exact dualities involving Chern-Simons gauge theories, and modeling of the cosmological inflation.



Igor Klebanov, Princeton University

Hosted by Alberto Nicolis