TEP Seminar

Tuesday, April 2 @ 4PM
PAB Room 4-330

UCLA

"Black Hole formation at the Correspondence Point"

Debajyoti Sarkar (City University of New York)

We study the process of bound state formation in a D-brane collision. We consider two mechanisms for bound state formation. The first, operative at weak coupling in the worldvolume gauge theory, is pair creation of W-bosons. The second, operative at strong coupling, corresponds to formation of a large black hole in the dual supergravity. These two processes agree qualitatively at intermediate coupling, in accord with the correspondence principle of Horowitz and Polchinski. We show that the size of the bound state and timescale for formation of a bound state agree at the correspondence point. The timescale involves matching a parametric resonance in the gauge theory to a quasinormal mode in supergravity.