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# KMI-Tagen Joint Seminar

Friday, July 11, 2014

5:00 pm, KMI Science Symposia (ES635)

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## “The large $D$ limit of General Relativity”

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### Abstract:

General Relativity is an old theory but its dynamics remains difficult to solve and understand, in particular when strongly-gravitating objects such as black holes are involved. Although at first sight it may seem an odd idea, I will argue that it is actually quite natural to investigate the properties of this theory and its black holes in the limit in which the number of spacetime dimensions  $D$  grows to infinity. The gravitational field localizes very strongly near the black hole horizons, which simplifies dramatically the description of their interactions and allows efficient calculational approaches in an expansion in  $1/D$ . There are also hints that this limit may lead to a reformulation of the theory in terms of low-dimensional strings.