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Gravity and Entanglement

Tuesday, June 17, 2014 11:45 AM (30 minutes)

The AdS/CFT correspondence from string theory provides a quantum theory of gravity in which spacetime and gravitational physics emerges from an ordinary non-gravitational system with many degrees of freedom. In this talk, I will explain how quantum entanglement between these degrees of freedom is crucial for the emergence of a classical spacetime, and how Einstein's equations can be derived at the linearized level from the dynamics of quantum entanglement.

Presenter: VAN RAAMSDONK, Mark (University of British Columbia)

Session Classification: (T-MEDAL3) CAP Medal Talk - Mark van Raamsdonk, UBC (CAP-CRM Prize in Theoretical and Mathematical Physics Recipient / Récipiendaire Prix ACP-CRM en physique théorique et mathématique)