Institut Henri Poincaré

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String Theory in Greater Paris

Rencontres Théoriciennes

"Supergravité, théorie des cordes et théorie M"

Jeudi 15 Octobre 2020, 17:00

Mark Van Raamsdonk

University of British Columbia

Towards Microscopic Models of Big Bang Cosmology

In this talk, we review an approach to describing cosmological physics using ordinary AdS/CFT, where the cosmological physics is the effective description of an end-of-the-world brane which cuts off the second asymptotic region of a two-sided black hole. The worldvolume geometry of the brane is an FRW big-bang/big-crunch spacetime. In favorable circumstances, the brane acts as a Randall-Sundrum Planck brane so that gravity localizes. We describe a microscopic construction for such an end-of-the-world brane with localized gravity in AdS/CFT, starting from N=4 SYM theory. We suggest specific microscopic states of N=4 SYM theory that may encode the physics in a four-dimensional cosmological spacetime.

Institut Henri Poincaré, salle 314, 3ème étage

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