

Institut Henri Poincaré
11 rue Pierre et Marie Curie, 75231 Paris cedex 05
String Theory in Greater Paris

Rencontres Théoriciennes
“Supergravité, théorie des cordes et théorie M”

Jeudi 15 Octobre 2020, 17:00

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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, 3^{ème} étage

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