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Dark D-brane Cosmology

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The talk is about the possibility of matter residing on a brane moving in extra dimensions. Such matter would be disformally coupled to gravity. Due to a screening mechanism, the coupling could be viable even in the visible sector. The Dirac-Born-Infeld set-up in type II string theory is used to illustrate how the coupling functions can be explicitly deduced from the higher dimensional geometry, and general implications of disformal matter couplings are reviewed. A concrete cosmological model with dark matter residing on the moving brane is presented to demonstrate how some fine-tuning problems of the dark sector might be alleviated in this framework.

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