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Holographic models with a small cosmological constant at Finite Temperature

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The cosmological constant problem can be reformulated in the brane world models. It was recently proposed that in "**generalized**"**holographic Randall-Sundrum** like models of spontaneously broken conformal invariance, a **naturally light dilaton** can be obtained via the condensation of a near marginal operator. The resulting 4D effective cosmological constant is also suppressed. We discuss a "**soft-wall**" realization of the Randall Sundrum geometry where the infrared brane plays a lesser role as a cutoff for large curvature effects and low energy observables such as spectrum of states are largely insensitive to its position. We then explore the finite temperature behavior of such models by studying geometries which include a horizon or a "black brane"along the extra dimension in the presence of non-trivial scalar field vacuum expectation value. A **first order geometric phase transition** proceeds via bubble nucleation between the two different gravity solutions. We shall then compare these results to the Randall Sundrum phase transition with Goldberger-Wise stabilization.

Author: JAIN, Bithika (Korea Institute for Advanced Study, South Korea)

Co-authors: BUNK, Don (Hamilton College); HUBISZ, Jay (Syracuse University)

Presenter: JAIN, Bithika (Korea Institute for Advanced Study, South Korea)

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