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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. In this talk I will 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. I will 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. I shall then compare these results to the Randall Sundrum phase transition with Goldberger-Wise stabilization.

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