6D Anti-de Sitter Space Solutions to Einstein's Equation with Scalar Fields JORDAN KEHRER, United States Naval Academy — We study a scalar field in six-dimensional Anti-de Sitter space by extending the Randall-Sundrum model. The model includes a single scalar field and two compactified extra dimensions. Using perturbation methods, we simultaneously solve the Einstein Field equation and the Klein-Gordon equation to find the back reaction on the Anti-de Sitter space metric. Following the methods of Golberger and Wise, we minimize the scalar field potential to find the compactification length of the warped extra dimension. We study whether this solution has the properties to solve the hierarchy problem.

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