1144-46-129 **Trubee Hodgman Davison*** (trubee.davison@colorado.edu), University of Colorado, Campus Box 395, Boulder, CO 80309. *Unitary representations of the Baumslag-Solitar group associated to the Cantor Set.*

The Cantor set supports a Borel probability measure known as the Hutchinson measure which satisfies a well known fixed point relationship. Previously it has been shown by P. Jorgensen and D. Dutkay that the Cantor set can be extended to an inflated Cantor set, $\mathcal{R}$, on a subset of the real line, which supports an extended Hutchinson measure μ. Unitary dilation and translation operators can be defined on $L^2(\mathcal{R}, \mu)$ which satisfy the Baumslag-Solitar relation, and give rise to a multi-resolution analysis. The filter function associated to this construction can be used to produce a measure, m, on the solenoid, $\mathcal{S}$, a compact topological group. The Hilbert space $L^2(\mathcal{S}, m)$ also has a unitary representation of the Baumslag-Solitar group, and there exists a generalized Fourier transform between $L^2(\mathcal{R}, \mu)$ and $L^2(\mathcal{S}, m)$. In this talk, we will show that the unitary operators on $L^2(\mathcal{S}, m)$ mentioned above are related to each other via a family of partial isometries, which satisfy some interesting properties. (Received August 21, 2018)