

1058-42-170

**Judith A Packer\*** ([packer@colorado.edu](mailto:packer@colorado.edu)), Department of Mathematics, CB 395, University of Colorado, Boulder, CO 80305. *On induced representations of Baumslag-Solitar groups and existence of wavelet sets.*

Recent investigations done in collaboration with L. Baggett, K. Merrill, and A. Ramsay will be discussed, that study representations of Baumslag-Solitar groups on Hilbert spaces built on solenoids, as first constructed using wavelet filter functions by D. Dutkay and P. Jorgensen. We remark that the existence of a wavelet-set wavelet, even in the case where the filters in question come from wavelets on inflated fractal sets, is contingent on the corresponding representation of the Baumslag-Solitar group  $\mathbb{Q}_A \rtimes \mathbb{Z}$  being induced from a representation of the normal abelian subgroup  $\mathbb{Q}_A$ . Here  $\mathbb{Q}_A = \cup_{n=0}^{\infty} A^n(\mathbb{Z}^d)$ , where  $A$  is a  $d \times d$  dilation matrix with integer entries. We relate our work to previous works of L.-H. Lim– J. Packer–K. Taylor, Dutkay–Jorgensen, and E. Weber. (Received February 14, 2010)