1023-E5-290   **Kourosh Zarringhalam*** (`kouroshz@unh.edu`), Math Dept, Kingsbury Hall, Durham, NH 03824, and **Kevin M Short** (`kevin@chaoticom.com`), Math Dept, Lingsbury Hall, Durham, NH 03824.
An Adaptive Multiresolution Analysis for Image Compression Using Compact CUPOLETS.

We present a control scheme for stabilizing unstable periodic orbits based on the control scheme of Hayes, Grebogi and Ott. The resulting orbits have been dubbed cupolets and have been proven to be useful in the representation of oscillatory or quasi periodic signals such as appear in music compression.

In this paper we show that these cupolets can be used to construct a periodic multiresolution analysis for the space of real valued functions of a discrete variable.

This is demonstrated with an image compression example. Thus cupolets provide an interesting continuum between Fourier Analysis and Wavelet Analysis. (Received September 03, 2006)