1046-43-86 **Taylor Edward Burmeister*** (tburmeis@haverford.edu), c/o Haverford College, 370 Lancaster Avenue, Haverford, PA 19041. *Local Edge Detection with Wavelet Coefficients.*

We will provide a quick introduction to wavelet series and explore some analysis of wavelet coefficients that may be used in developing an effective method of edge detection with wavelets. Shlomo Engelberg recently published a paper on edge detection using Fourier coefficients, wherein he showed how to determine the continuity of a function based on the absolute summability of its Fourier coefficients and demonstrated a method of identifying jump discontinuities and their heights from a functions Fourier coefficients. We will explore some similar results with wavelet coefficients. Specifically, we will look at what happens to the wavelet coefficients over a point if the function jumps at that point and relate the absolute summability of a function's wavelet coefficients at a point or on an interval with its continuity at that point or on the interval. Further, we will compare wavelets with Fourier series as a tool for edge detection. (Received July 22, 2008)