Applied Mathematics

McGill
Applied Mathematics

April 15, 2002

George C. Hsiao, Dept. of Math. Sciences, U. Delaware.

Title: Wavelets and Applications.

MONDAY April 15, 2002

Time: 2:30 pm

Room: Burnside 920

Abstract: In recent years, there has been an increase of interest in wavelets, in a wide range of fields in science and engineering and beyond. Of course, many of the ideas behind wavelets are by no means new. What has been achieved in the past 10-15 years is the common mathematical framework into which there have been incorporated; the understanding of the connection between discrete filter banks and wavelet bases for functions in continuous time; the development of software for wavelets and many related methods. In this expository lecture, we give an overview of the wavelet analysis. In particular, we will present some of the fundamentals of the common mathematical framework and the basic theory underlying wavelet techniques. Applications in the areas of signal processing, data and image compression as well as numerical analysis will be illustrated by simple examples.

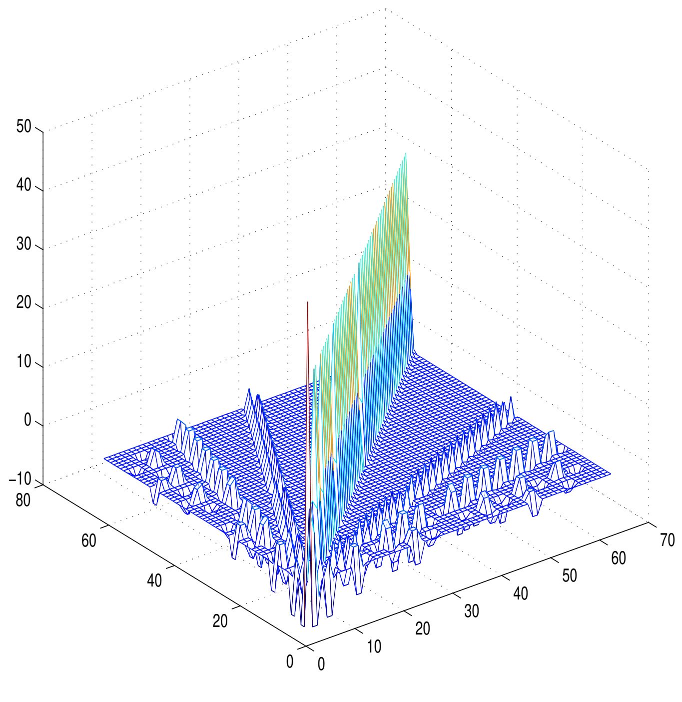

Figure 1: The (sparse) stiffness matrix