1023-42-320   **Ahmed I. Zayed*** (`azayed@math.depaul.edu`), Department of Mathematical Sciences, DePaul University, Chicago, IL 60614, and **Lucia Dettori**, School of Computer Science, Telecommunication, Information system. *Texture Identification of Tissues Using Directional Wavelet, Ridgelet and Curvelet Transforms.*

The wavelet transform on the real line is an effective tool for detecting point singularities. However, because of its lack of orientation, the multi-dimensional wavelet transform does not perform very well when the singularities are of higher dimensions.

In the last few years new geometric multiscale transforms, such as the directional wavelet , ridgelet and curvelet transforms, have been developed to, among other things, detect intermediate-dimensional singularities. The problem of detecting singularities is closely related to image processing because in two-dimensional images smooth regions are separated by edges which are typically smooth curves.

In this talk we discuss an application of the directional wavelet, ridgelet and curvelet transforms in medical imaging. We compare the performance of these transforms in texture identification of tissues in images obtained from computed tomography scans. (Received September 05, 2006)