

Special Colloquium in Applied Math

SPEAKER: DR. BIN DONG OF UC SAN DIEGO

“Mathematics in Medical Imaging and Image Analysis”

Abstract:

Variational models and tight wavelet frame based models for image processing have been extensively studied for the past 15 years. However, it was only in recent years did people start to seriously apply these models to medical imaging and related problems. In my talk, I will explain how we did fashion these known models in image processing properly to solve problems in medical imaging and image analysis. Furthermore, I will draw connections between variational models and one of frame based model. Such connections not only grant geometrical insights to the frame based model, but also provide us a new viewpoint of frame transform that leads to frame based models for medical image segmentations and surface reconstruction from scattered data. In addition, we also combined the idea of multiresolution analysis with that of set method, and developed a new multiscale representation for surfaces, and then applied it to surface in painting problems that help doctors quantify plaque formation of blood vessels.

Friday, February 18th, 2011

Surge Building, Room 284

Tea, Coffee and Cookies @ 3:40pm

Talk begins @ 4:00pm - Ends @ 5:00pm

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