

*Invited Presentation****BIOMEDICAL ENGINEERING SEMINAR***

11:00 a.m.-12:00 noon, Friday, May 29, 2009
Mann Hall, Medical Sciences Building

Title: Motion-Compensated Image Reconstruction

Presenter: Jeff Fessler, Ph.D.
Professor, Electrical Engineering and Computer Science
Department, College of Engineering
University of Michigan

Abstract: Image reconstruction of moving objects (such as breathing patients) is challenging due to inconsistencies between measurements acquired at different phases of the motion. Compensating for motion during image reconstruction requires tools similar to those used in nonrigid image registration. In the first part of this talk I will discuss an approach for nonrigid image registration based on B-spline deformation models. The key feature of this approach is that it provides a simple way to ensure that the estimated deformation is invertible (diffeomorphic). This constraint is important for the registration to be physically plausible. In the second part of the talk I will describe a couple of different approaches for using this type of image registration tool in the context of image reconstruction of moving objects.

Host: Armando Manduca, Ph.D.

◆ See BME web page for list of speakers:

http://mayoresearch.mayo.edu/mayo/research/physio_bme/2009_bme_seminars.cfm