Department of Mathematics

University of Houston

Scientific Computing Seminar

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Diffeomorphic matching and dynamic deformable shapes

Thursday, September 15, 2011

3:00 PM- 4:00 PM

Room 646   PGH

Abstract: The aim of the talk is to explain how to solve the diffeomorphic matching problem when we are given a finite sequence of intermediary surface (or curve) positions S_j in $\mathbf{R}^3$ at given times T_j, $j = 1, \ldots, p$. The work is an extension of the variational approach based on Hilbert spaces of time dependent vector fields derived from papers by J. Glaunes, M. Miller, A. Trouve, L. Younes et. al. I will then present related numerical results for dynamic soft shapes in 3D, based on shape models of the Mitral Valve previously extracted from live 3D-echocardiographic image sequences of beating hearts. This work has been done in collaboration with R. Azencott, R. Glowinski, J. He, R.Hoppe, A. Martynenko and Y. Li and with Methodist Hospital (Cardiology).

This seminar is easily accessible to persons with disabilities. For more information or for assistance, please contact the Mathematics Department at 743-3500.