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Computational Mathematics Seminar Series

A Parametric FEM for Geometric Problems: Techniques & Applications**Miguel Sebastian Pauletti, Texas A&M University**

Assistant Professor

Johnston Hall 338
March 16, 2011 - 03:30 pm**Abstract:**

A parametric FEM for free boundary problems is discussed. Some applications include geometric and fluid-membrane interaction in biomembranes. With slight modification the method can be successfully applied in shape optimization problems such the design of an obstacle with minimal drag or a bypass design. Adaptivity becomes tricky, the issue (Geometric consistency) and a solution is discussed. Then GC can be exploited for a novel algorithm for surface restoration.

Speaker's Bio:

Miguel Sebastian Pauletti got his B.S. in Applied Mathematics from the Universidad Nacional del Litoral in 2002 and his M.S. in Mathematics in 2002. He received his Ph.D. in Applied Mathematics and Scientific Computation from the University of Maryland in 2008. His research interests include: numerical analysis of partial differential equations and scientific computing, derivation, analysis and implementation of adaptive finite element schemes approximating free boundary problems.

