8th. World Congress on Computational Mechanics (WCCM8)
5th European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS 2008)
June 30 –July 5, 2008
Venice, Italy

Generalized Finite Element Methods, Meshless Methods, and Quadrature

*** John Osborn**[1]

[1] Department of Mathematics, University of Maryland, College Park
College Park, MD 20742
jeo@math.umd.edu, http://www.umd.edu/ jeo/

Key Words: *Generalized Finite Element Methods, Meshless Methods, Quadrature, Particle Shape Functions.*

ABSTRACT

Generalized Finite Element Methods (GFEM) and Meshless Methods (MM) are the focus of considerable interest, especially in the engineering community. In this talk I will survey MM and GFEM, concentrating on basic ideas, and on joint work with Ivo Babuška and Uday Banerjee on the approximability and selection of particle shape functions. It is widely recognized that creating effective quadrature schemes for GFEM and MM is an important problem. I will discuss recent joint results with Babuška, Banerjee, and Helen Li on quadrature schemes for MM.

REFERENCES

[1] J.-S. Chen, C.-T. Wu, S. Yoon, and Y.You. "A stabilized conforming nodal integration for Galerkin mesh free methods". *Int. J. Numer. Meth. Engng.*, Vol. **50**, 435-466, 2001.