PIMS / AMI Seminar

Friday, March 15, 2013
3:00 p.m.
CAB 657

"High accuracy solutions to industrial problems"

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Abstract

Industrial partners often have very high expectations concerning numerical modeling: accuracy, efficiency, robustness and, whenever possible, low computation costs and this, for very complex problems. In the last few years, we have concentrated our efforts at GIREF on the development of quadratic discretizations (in both space and time) for a large variety of applications. This is a good compromise between linear solutions (wrongly believed as low cost solutions) and higher order finite element approximations requiring higher solution regularity. To further enhance the accuracy of our solutions, we have also developed an adaptive remeshing strategy that can be applied to high order discretizations and leads to optimal meshes in a sense that will be explained. This also led to the development of iterative methods that maintain their convergence properties on very anisotropic meshes. In this presentation, we will briefly describe some of these methods and present a few industrial applications.

Refreshments will be served in CAB 649 at 2:30 p.m.