ÉCOLE POLYTECHNIQUE
FÉDÉRALE DE LAUSANNE

Prof. Alfio QUARTERONI
Mathematics Institute of Computational Science and Engineering - MATHICSE

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MATHICSE COLLOQUIUM

➢ **TUESDAY 12 APRIL 2016 - ROOM CM1 221 - 16h15**

Prof. Max GUNZBURGER (Florida State University, USA) will present a seminar entitled:

"Integral equation modeling for nonlocal diffusion and mechanics"

Abstract:

We use the canonical examples of fractional Laplacian and peridynamics equations to discuss their use as models for nonlocal diffusion and mechanics, respectively, via integral equations with singular kernels. We then proceed to discuss theories for the analysis and numerical analysis of the models considered, relying on a nonlocal vector calculus to define weak formulations in function space settings. Brief forays into examples and extensions are made, including obstacle problems and wave problems. [Based on joint works with Marta D'Elia, Qiang Du, Richard Lehoucq, and Xiaochuan Tian]

Lausanne, 22 March 2016 /AQ/cr

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The MATHICSE seminars are announced at http://mathicse.epfl.ch/seminars