Mathematics, Statistics, and Computer Science   **@ UIC**

Departmental Colloquium

Elastoplasticity Simulation with the Material Point Method

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Abstract: Hyperelastic constitutive models describe a wide range of materials. Examples include biomechanical soft tissues like muscle, tendon, skin etc. Elastoplastic materials consisting of a hyperelastic constitutive model combined with a notion of stress constraint (or feasible stress region) describe an even wider range of materials. A very interesting class of these models arises from frictional contact considerations. Examples include granular materials like sand and snow. I will present recent models developed for novel applications including frictional contact for membrane and thin shell simulation, ductile fracture and baking of breads and cookies. I will also present novel Material Point Methods (MPM) used for approximating the governing equations.

Friday, March 5 at 3:00 PM in Zoom