**ALEX DUSSAULT**, Université Laval
*Interior-point methods in contact mechanics*

Contact mechanics has a wide range of applications in engineering, by modeling the deformation and interaction of bodies in contact, with or without friction. Simulations of these problems are classically done using an Augmented Lagrangian formulation, solved with a semi-smooth Newton's method. In this presentation, we explore an alternative approach: the application of interior-point methods to contact mechanics. We will discuss the motivations behind this choice, highlight the computational and theoretical challenges involved, and examine the specific technical considerations that arise in this context.