MASc Position Available

How do we quantify uncertainty in the results of solid mechanics computer simulations? For instance, in an automobile crash simulation, what is the uncertainty in the predicted magnitudes of structural intrusion into the passenger cabin?

Uncertainty in the latter prediction stems from the interaction and failure of several materials in the vehicle, spatial and temporal discretization in the model. We focus on novel experimental and computational methods to quantify uncertainty in the failure of ductile engineering alloys. The uncertainty being computed using a Bayesian approach.

This research involves large-scale computing, materials testing, materials science, and probability. Part of the effort will be carried out at a Federal materials science laboratory, CanmetMATERIALS.

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