



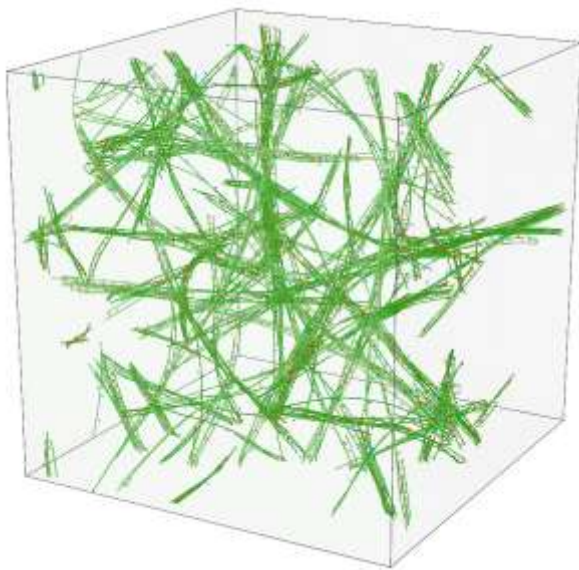
Chemical & Physical Sciences
UNIVERSITY OF TORONTO
MISSISSAUGA

COLLOQUIUM
TUESDAY, 4 NOVEMBER 2014
12:00 NOON – 1:00 PM
IB280

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**Semiflexible networks
with labile cross linkers:
Bundling, rheology, ripping, and healing**



Networks of semiflexible filaments, such as those found in the cytoskeleton, may be cross-linked by molecules that can unbind and rebind in different places throughout the network. The structure of such networks is therefore dynamic. It may evolve slowly towards equilibrium, or rearrange itself in response to externally applied stresses. Cross linker mobility leads to new rheological features related to bundling/unbundling of filaments, and new dissipative mechanisms associated with cross linker unbinding.

In this talk the results of analytic calculations and numerical simulations exploring the effect of transient cross linkers on the linear rheology and structural evolution of semiflexible networks will be presented. The fluctuation-induced or Casimir interactions between cross linkers in a semiflexible filament network, and examine how such networks rip and recover under large applied stresses will also be discussed.