1136-65-589 **Xiaochuan Tian***, 305 W 39th St, APT 105, Austin, TX 78751, and **Qiang Du**. *Asymptotically Compatible Schemes for Robust Discretization of Nonlocal Models.*

Nonlocal continuum models are in general integral-differential equations in place of the conventional partial differential equations. While nonlocal models show their effectiveness in modeling a number of anomalous and singular processes in physics and material sciences, they also come with increased difficulty in numerical analysis with nonlocality involved. In this talk, we study robust numerical approximations of linear nonlocal peridynamic models parametrized by the horizon parameter. In particular, we provide asymptotically compatible discretization for nonlocal parametrized models which give convergent schemes in both nonlocal settings and their local limits. (Received January 22, 2018)