

# COLLOQUIUM

## Asymptotically compatible discretization of parametrized variational problems with applications

Qiang Du  
Columbia University

September 5, 2014

Many physical models are parametrized by a changing parameter. We present the framework of asymptotically compatible (AC) schemes for discretizing a class of parametrized variational problems. These schemes provide convergent approximations not only for a given value of the parameter but also when the parameters tend to an asymptotic limit. They are thus more robust for simulating problems involving changing parameters.

We discuss their applications to the numerical solution of some nonlocal models and their local limits which illustrate that some popular methods may fail to be AC while general conditions can be given to characterize what schemes are AC.

The lecture will take place in Thackeray 704 at 3:30pm.  
Refreshments will start at 3:00pm.