# COLLOQUIUM

## Deformations with constraints: Analysis and applications in calculus of variations

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Weakly regular mappings with constraints arise as the space of admissible functions in a large range of models in calculus of variations. The rigorous derivation and analysis of these models require a better understanding of these exotic function spaces from analytical, topological or geometrical viewpoints and give rise to a spectrum of purely theoretical problems.

We will review, by way of examples, a few of such variational models and briefly discuss the respective function spaces in which they are posed. In particular, we will focus on the Sobolev isometric immersions and on the Sobolev solutions to the Monge-Ampere equations. Problems of interest in this context include questions of rigidity vs. flexibility, regularity, density and continuation. We will present a few recent results, some applications in nonlinear elasicity theory, the ongoing work and some open problems.

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