

The College of Arts & Sciences
Department of Mathematical Sciences
Colloquium

Professor Jani Onninen

Syracuse University

Thursday, October 17, 2024

French Hall West, Room 4221

4:00-5:00pm

Existence of 2D frictionless minimal deformations

In Geometric Function Theory we seek, as a generalization of the Riemann Mapping Problem, homeomorphisms that minimize certain energy integrals. No boundary values of such homeomorphisms are prescribed. This is interpreted as saying that the deformations are allowed to slip along the boundary, known as frictionless problems. This leads us to determine the infimum of a given energy functional among homeomorphisms from X onto Y . However, even in the model of the Dirichlet energy, it is often unrealistic to expect the infimum to be achieved within the class of homeomorphisms. Expanding the class of admissible mappings may alter the energy-minimizing solutions. To avoid the Lavrentiev gap, we turn to the study of monotone Sobolev mappings, which is the focus of my talk.

**Refreshments will be served 3:15-3:45 pm in the Faculty Lounge
4118 French Hall West**