TEMPLE UNIVERSITY

Department of Mathematics

Analysis Seminar

Room 617 Wachman Hall

Monday, March 25th, 2024, 2:30 p.m.

Homogenization of nonconvex Hamilton-Jacobi equations in stationary ergodic media

by Atilla Yilmaz

Temple University

Abstract: After giving a self-contained introduction to the homogenization of Hamilton-Jacobi (HJ) equations in stationary ergodic media in any dimension, I will focus on the case where the Hamiltonian is nonconvex, and highlight some interesting differences between: (i) periodic vs. truly random media; (ii) dimension one vs. higher; and (iii) inviscid vs. viscous HJ equations. In particular, I will present a recent result (from joint work with E. Kosygina) on the loss of quasiconvexity which can happen only in the viscous case.