Department of Mathematics
University of Notre Dame

GRADUATE STUDENT GEOMETRY SEMINAR

Guest Speaker: Ilya Marchenka
University of Notre Dame

Date: Wednesday, December 6, 2023
Time: 12:00 PM
Location: 258 Hurley Hall
Zoom URL: NA

Lecture Title:

Asymptotic Expansions at Infinity for Solutions of Some Nonlinear Geometric PDE's in Exterior Domains

Abstract

We study the asymptotic behavior of solutions of a family of fully nonlinear elliptic equations in $\mathbb{R}^n \setminus \bar{B}_1$ and establish expansions at infinity up to arbitrary order. We then prove the existence of solutions with prescribed asymptotic behavior at infinity and an arbitrarily high order of approximation. We also prove a similar existence result for solutions of the minimal surface equation in $\mathbb{R}^n \setminus \bar{B}_1$ whose gradient vanishes at infinity.

Ilya Marchenka - University of Notre Dame