

GRADUATE STUDENT GEOMETRY SEMINAR

Guest Speaker: Ilya Marchenka
University of Notre Dame

Date: Wednesday, September 13, 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.