TEMPLE UNIVERSITY

Department of Mathematics

Analysis Seminar

Room 617 Wachman Hall

Monday, November 28, 2022, 2:30 p.m.

Overdetermined boundary value problem in uniformly rectifiable domains

by Artur Andrade

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Abstract: Some mathematical formulations of physical phenomena correspond to overdetermined boundary value problems, that is, boundary problems in which one prescribes both Dirichlet and Neumann type boundary datum.

The subject of this talk is the analysis of overdetermined boundary value problems (OBVP) for the Laplacian in non-smooth domains with boundary datum in Whitney–Lebesgue spaces with integrability index in the interval $(1, \infty)$. This analysis includes integral representation formula, jump relations, and solvability of the OBVP in uniformly rectifiable domain.

This is joint work with Irina Mitrea (Temple University), Dorina Mitrea and Marius Mitrea (Baylor University).