TEMPLE UNIVERSITY

Department of Mathematics

Analysis Seminar

Room 617 Wachman Hall

Monday, October 2nd, 2023, 2:30 p.m.

Overdetermined boundary value problems for 2nd order systems in uniformly rectifiable domains

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Abstract: A number of physical phenomena are modeled by overdetermined boundary value problems, that is, boundary problems in which one imposes both Dirichlet and Neumann type boundary conditions.

The subject of this talk is the analysis of overdetermined boundary value problems (OBVP) for 2nd order homogeneous constant complex coefficient weakly elliptic systems in non-smooth domains with boundary datum in Whitney–Lebesgue spaces with integrability index in the interval $(1, \infty)$. This analysis includes integral representation formulas, jump relations, existence and uniqueness of solutions for the OBVP in uniformly rectifiable domains, and classical Hardy spaces associated with systems.

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