

TEMPLE UNIVERSITY

Department of Mathematics

Analysis Seminar

Room 617 Wachman Hall

Monday, October 25 2021, 2:30 p.m.

*On the Lack of Fredholm Solvability for the L^p
Dirichlet Problem for Weakly Elliptic Systems in
the Upper Half-Space*

by Irina Mitrea

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Abstract: The L^p Dirichlet Problem for constant coefficient second-order systems satisfying the Legendre-Hadamard strong ellipticity condition is well posed in the upper half-space. Surprisingly, this result may fail if only weak ellipticity is assumed, and the failure manifests itself at a fundamental level through lack of Fredholm solvability. In this talk I will discuss a couple of pathological cases, sought in the class of weakly elliptic systems that fail to possess a distinguished coefficient tensor. This is joint work with Dorina Mitrea and Marius Mitrea.