TEMPLE UNIVERSITY

Department of Mathematics

Analysis Seminar

Room 617 Wachman Hall

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A new generation of Calderon-Zygmund theory for singular integrals on Riemannian manifolds

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Abstract: The last few decades have witnessed spectacular progress in our understanding of the interplay between analysis and geometry. In this talk I will be reporting on the development of a new brand of theory of singular integrals (of Calderon-Zygmund flavor) which is well-suited for dealing with elliptic boundary value problems on some very general classes of subdomains of Riemannian manifolds. The latter are so rough, that they are best described in the language of geometric measure theory. Remarkably, uniform rectifiability plus some type of infinitesimal flatness (encoded into the behavior of the outward unit normal) turns out to always imply solvability results.