TEMPLE UNIVERSITY

Department of Mathematics

Analysis Seminar

Room 617 Wachman Hall

Monday, April 20, 2014, 2:40 p.m.

Higher order Poisson Kernels and L^p polyharmonic boundary value problems in Lipschitz domains

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In this talk, I introduce higher order Poisson kernels, which are higher order analogues of the classical Poisson kernels, as well as the polyharmonic fundamental solutions, and define multi-layer potentials in terms of Poisson field and the polyharmonic fundamental solutions, in which the former formed by the higher order Poisson kernels. Then by the multi-layer potentials, three classes of L^p polyharmonic boundary value problems (i.e., Dirichlet, Neumann and regularity problems) in Lipschitz domains are solved, and the integral representation (or potential) solutions of these problem are given.