



Analysis Seminar

Title: Approximation Theory and Some Free Boundary Problems

Speaker: Dmitry Khavinson (University of South Florida)

Date: Wed 3rd May 2023 at 3:00PM

Location: Seminar Room SCN 1.25

Abstract: We shall try to outline the program started 4 decades ago that focuses on approximating particular “badly approximable” functions that leads to unexpectedly exciting problems in mathematical physics. So called free boundary problems. For example studying the approximation of z^* by analytic functions leads to the isoperimetric inequality, J. Serrin’s problem in hydrodynamics, equilibrium of electrified droplets, St. Venant’s inequality for torsional rigidity, etc. A Many simply stated open questions, that still remain open in spite of the recent progress in the last decades, will be discussed. The talk should be accessible to graduate students and math majors.

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