

Title: A limiting optimal design problem governed by non-local diffusion.

Abstract:

In this talk we study a p -fractional optimal design problem under volume constraint taking special care of the case when p is large, obtaining in the limit profile a free boundary problem modelled by the Hölder Infinity Laplacian operator. A necessary and sufficient condition is imposed in order to obtain the uniqueness of solutions to the limiting problem, and, under such a condition, we find precisely the optimal configuration for the limit problem. We also prove the sharp $C_{\text{loc}}^{0,s}$ regularity for any limiting solution.

The results presented in this lecture are joint work with Julio D. Rossi from Universidad de Buenos Aires (Argentina).