Seminar EDPs

Speaker: Erwin Topp Paredes, (Usach)

Title: A nonlocal version of the inverse problem of Donsker and Varadhan.

Abstract:

In their seminal paper of 1976, M.D. Donsker and S.R.S. Varadhan addressed the following "inverse problem": let consider two linear, second-order, uniformly elliptic operators L_1, L_2 with the form

$L_i \phi = Div(A_i(x)D\phi) + b_i(x) \cdot D\phi$, i = 1, 2.

If for every domain Ω and every smooth potential V , the operators $L_1 + V$ and $L_2 + V$ have the same principal eigenvalue in Ω, then the diffusions are equal ($A_1 = A_2$), and either $L_1\phi = L_2(u\phi)/u$ for some L_2-harmonic function u, or $L_1\phi = L^*_2(u\phi)/u$ for some L^*_2-harmonic function u.

In this talk we report a nonlocal a version of this problem, where both the diffu- sion and transport terms defining the involved operators have a fractional nature. We prove a similar conjugacy phenomena among operators having the same principal eigenvalues, by means of a minmax characterization for them, and developing new ideas to overcome the difficulties posed by the non locality.

This is a joint work with Gonzalo Da´vila (UTFSM-Chile).

Zoom:
https://uchile.zoom.us/j/82509433455?pwd=dXFkbVc5OS92T054YzZBWVJlVVdxQT09

Meeting ID: 825 0943 3455
Passcode: 352594

Thursday (9/09) at 4:15 pm (Chilean time).