

Dilluns 19 de desembre del 2011, 16:00h

Aula T2 (UB)

---

**Analysis and potential theory for higher order PDEs in the domains of rough geometry**

SVITLANA MAYBORODA

University of Minnesota

**ABSTRACT:**

The theory of higher order elliptic equations is full of paradoxes and open problems. Contrary to Hadamard's conjecture, the positivity of the Green function may fail, and even the Miranda-Agmon maximum principle does not necessarily hold in non-smooth domains. We will discuss these and related issues. I will present recently discovered sharp pointwise estimates on polyharmonic functions in rough domains and the extension of Wiener criterion, capacity and potential to the context of higher order PDEs. We will also discuss the impact of various irregularities of the geometry of the boundary on the behavior of solutions. This is joint work with V. Maz'ya.