

BOUNDARY SINGULARITIES OF SOLUTIONS TO SEMILINEAR FRACTIONAL EQUATIONS

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Abstract. In this talk, I discuss the existence of a solution of $(-\Delta)^s u + f(u) = 0$ in a smooth bounded domain $\Omega \subset \mathbb{R}^N$ with a prescribed boundary value μ in the class of Radon measures for a large class of continuous functions f satisfying a weak singularity condition expressed under an integral form. The existence of a boundary trace for positive moderate solutions is also presented. In the particular case where $f(u) = u^p$ and μ is a Dirac mass, I show the existence of several critical exponents p .

This is a joint work with Laurent Véron.