

## Fractional elliptic problems with nonlinear gradient sources and measures

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In this talk, we will deal with the study of existence and regularity of appropriate weak solutions for non-local quasi-linear problems involving measures:

$$(1) \quad \begin{cases} (-\Delta)^\alpha u(x) = g(x, |\nabla u|) + \sigma \nu & \text{in } \Omega, \\ u(x) = \varrho \mu & \text{in } \mathbb{R}^N \setminus \Omega, \end{cases}$$

where  $\varrho, \sigma \geq 0$ ,  $\mu$  and  $\nu$  are suitable Radon measures,  $g : \Omega \times [0, \infty) \rightarrow [0, \infty)$  is a continuous function fulfilling certain growth conditions (to be presented *a posteriori*) and  $\Omega \subset \mathbb{R}^N$  is a  $C^2$  bounded domain. We shall discuss different regimes where a solution may be defined and we will extend the presentation to Dirichlet problems like (1) with the addition of measures concentrated on the boundary  $\partial\Omega$ .

This is a joint work with Analia Silva from Universidad Nacional de San Luis-conicet and Joao Vitor da Silva from Universidad de Brasilia.