



SEMINÁRIO DE EQUAÇÕES DIFERENCIAIS PARCIAIS

**Existence of two normalized solutions for a Choquard equation with
exponential growth and an L^2 -subcritical perturbation**

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Resumo: This paper is concerned with the existence of normalized solutions for the following class of Choquard elliptic problems:

$$\begin{cases} -\Delta u + \lambda u = (I_\alpha * F(u))f(u) + \mu(I_\alpha * |u|^q)|u|^{q-2}u, & \text{in } \mathbb{R}^2, \\ \int_{\mathbb{R}^2} |u|^2 = a, \end{cases}$$

where $a > 0$, I_α is the Riesz potential, $*$ represents the convolution operator, f has exponential critical growth in $\mathbb{R}^2$, $F(t) = \int_0^t f(s)ds$, and $1 + \frac{\alpha}{2} < q < 2 + \frac{\alpha}{2}$. By variational methods, we prove the existence of two normalized solutions, one with negative energy and one with positive energy. Talk related to: Li, Maia, Miyagaki- ZAMP 2024