Ground state solutions for a (p, q)–Choquard equation with a general nonlinearity

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In this talk, we will consider for the following (p, q)-Choquard equation

$$-\Delta_p u - \Delta_q u + |u|^{p-2}u + |u|^{q-2}u = (I_\alpha * F(u))\, f(u) \quad \text{in } \mathbb{R}^N,$$

where $2 \leq p < q < N$, Δ_s is the s–Laplacian operator with $s \in \{p, q\}$, I_α is the Riesz potential of order $\alpha \in ((N - 2q)^+, N)$, $F \in C^1(\mathbb{R}, \mathbb{R})$ is a general nonlinearity of Berestycki–Lions type, and $F' = f$. By means of variational methods, we analyze the existence of ground state solutions, along with the regularity, symmetry, and decay properties of these solutions. The talk is based on a joint work with V. Ambrosio [1].

References

[1] V. Ambrosio and T. Isernia, *Ground state solutions for a (p, q)–Choquard equation with a general nonlinearity*, J. Differential Equations **401** (2024), 428–468.