Title: Existence of solution for a generalized quasilinear elliptic problem

Authors: Edcarlos D. Silva - UFG & Maxwell L. Lizette - UFG & Marcelo F. Furtado - UNb.

Abstract: In this talk we establish the existence and multiplicity of solutions to the elliptic quasilinear Schrödinger equation

\[-\text{div}(g^2(u)\nabla u) + g(u)g'(u)|\nabla u|^2 + V(x)u = h(x,u), \quad x \in \mathbb{R}^N\]

where $g, h, V$ are suitable smooth functions. The function $g$ is asymptotically linear at infinity and, for each fixed $x \in \mathbb{R}^N$, the function $h(x, s)$ behaves like $s$ at the origin and $s^3$ at infinity. In the proofs we apply variational methods and the maximum principle.