

Equação de Schrödinger Quasilinear com Termo Crítico

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In this work we show existence of nontrivial solutions for quasilinear Schrödinger equations where the nonlinear term is of power kind. More precisely, we will deal with the problem

$$\begin{aligned} -\Delta u + V(x)u - \Delta(u^2)u &= \lambda q(x)u + \mu K(x)|u|^{p-2}u + |u|^{2 \cdot 2^* - 2}u + h(x), \quad x \in \mathbb{R}^N, \\ u &\in H^1(\mathbb{R}^N), \end{aligned} \tag{1}$$

where the parameter μ , λ are positive. The main difficulty arises from the fact that we consider nonlinear terms interacting with high eigenvalues for the linear problem. Under these conditions we consider a Local Linking Theorem to obtain the solution of the problem (??). The parameter μ must be large enough for the functional geometry to be verified and the solution found to be non-trivial when $h = 0$.

Joint work Edcarlos Domingos