

ON LINEARLY COUPLED SYSTEMS OF NONLINEAR EQUATIONS INVOLVING CRITICAL EXPONENTIAL GROWTH

J.C. de Albuquerque¹

In this talk we study the existence of positive ground state solutions to the following class of coupled systems

$$\begin{cases} -\Delta u + u = f_1(u) + \lambda(x)v, & x \in \mathbb{R}^2, \\ -\Delta v + v = f_2(v) + \lambda(x)u, & x \in \mathbb{R}^2, \end{cases}$$

where the nonlinearities $f_1(s)$ and $f_2(s)$ have critical exponential growth motivated by a class of Trudinger-Moser inequality introduced by D.M. Cao (1992). Our approach is variational and based on minimization technique over the Nehari manifold.

¹This is a joint work with J.M. do Ó - UFPB