V - WENLU - Workshop em Equações Diferenciais não Lineares da UFPB - Verão 2016

João Pessoa, 16 a 19 de Fevereiro , 2016

Title: Properties for Dirichlet problem associated to Neural Fields
Author: Severino Horácio da Silva and Antônio Luiz Pereira
Abstract: In this work we consider the non local evolution problem

$$\begin{cases} \partial_t u = -u + K(f \circ u) \ \ in \ \ \Omega, \\ u = 0 \ \ in \ \ \mathbb{R}^N \backslash \Omega, \end{cases}$$

where Ω is a smooth bounded domain in $\mathbb{R}^N$, $f : \mathbb{R} \to \mathbb{R}$ and K is an integral operator with a symmetric kernel. We prove existence and some regularity properties of the global attractor. We also show additional property smoothness of orbits and characterize the global attractor, using the properties of a Lyapunov functional for this model.