Phase separating solutions for two component systems in general planar domains.

Michał Kowalczyk

Universidad de Chile, IM PAN

Abstract

In this talk I will discuss a two component system of coupled non linear Schrödinger equations modeling the phase separation in the binary mixture of Bose-Einstein condensates and other related problems. Assuming the existence of solutions in the limit of large interspecies scattering length β the system reduces to a couple of scalar problems on subdomains of pure phases. Our result says that given a solution to the limiting problem under some additional non degeneracy assumptions there exists a family of solutions parametrized by $\beta \gg 1$. This is joint work with A. Pistoia and G. Vaira.