Dynamical l-Boson Stars and relatives

Juan Carlos Degollado Daza

Universidad Nacional Autónoma de México, México

In this talk I will review the solutions to the spherically symmetric Einstein-Klein-Gordon system for a collection of N complex scalar fields with an internal U(N) symmetry and no self-interactions known as l-boson stars. These solutions are compact, globally regular, configurations of self–gravitating boson fields characterized, besides the mass of the field, by an angular momentum number. I will describe the dynamical behavior when perturbed and focus on some of their properties in the large l limit. I will show that by using the semiclassical gravity approach and a single real scalar field in a spherically symmetric spacetime, it is possible to get a more general set of solutions representing boson stars.