Dynamic of Vortices in the Dipolar BEC Shell

S J Bereta[1] and M A C Santarelli[1]

[1]*Institute of Physics in Sao Carlos, University of São Paulo, CEP 13566-590, São Carlos, Brazil*
Contact Email: salvio.bereta@usp.br

In this apresentation we will present the density profile of the dipolar BEC shell shaped obtained by the best fitting adjusted numerically. Then, using this density profile we will predict the analytical velocity of the vortices and compare with the numerical one for the elements of $^{164}D_y$ and $^{166}E_r$. This analytical expression is obtained in two different ways: the minimization of the action through Euler-Lagrange equation; and local derivation. We will also discuss about the colapse cause by the dipolar interaction in the shell, that appears due to the phonons excitations.