

Topological interactions of non-Abelian vortices with quasi-particles in high density QCD

Non-Abelian vortices are topologically stable objects in the color-flavor locked (CFL) phase of dense QCD. We derive a dual Lagrangian starting with the Ginzburg-Landau effective Lagrangian for the CFL phase, and obtain topological interactions of non-Abelian vortices with quasi-particles such as $U(1)_B$ Nambu-Goldstone bosons (phonons) and massive gluons. We find that the phonons couple to the translational zero modes of the vortices while the gluons couple to their orientational zero modes in the internal space.

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