

Physics Seminar: Thomas Dumitrescu
Wednesday, April 23 · 2:00 – 3:00pm

Location: 313

Title: Fun with Superconducting Vortices

Abstract: I will explore the properties of Abrikosov-Nielsen-Olesen vortex strings -- magnetic flux tubes -- in a simple class of Abelian Higgs models, with different choices of potential. The equations governing these vortices become tractable in the limit of large magnetic flux. I will show that the strings exhibit two sharply distinct phases in this limit. I will then discuss the spectrum of small fluctuations around the strings, as well as the low-energy string effective action for the translational zero modes. I will conclude by comparing and contrasting with the properties of confining flux tubes.