

Abstract Submitted
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Heirarchical mesophases of vortex matter in layered and multi-component superconductors¹ CHRISTOPHER VARNEY, University of Massachusetts, Amherst, KARL SELLIN, Royal Institute of Technology, QINGZE WANG, University of Massachusetts, Amherst / Penn State University, HANS FANGOHR, University of Southampton, EGOR BABAEV, University of Massachusetts, Amherst — Based on several models for Type-1.5 and hybrid Type-1/Type-2 layered superconductors, we examine the zero temperature properties of vortices with Langevin dynamics and Monte Carlo simulations. We demonstrate that inter-vortex forces with multiple length scales can result in unusual mesophases of vortex structures, such as clusters of clusters, concentric rings, clusters in a ring, and stripes in a cluster.

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