

Abstract Submitted  
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**Stability of topological defects in chiral superconductors: London theory**<sup>1</sup> VICTOR VAKARYUK, Argonne National Lab — We examine thermodynamic stability of chiral domain walls and vortices – topological defects which can exist in chiral superconductors. Using London theory it is demonstrated that at sufficiently small applied and chiral fields the existence of domain walls and vortices in the sample is not favored and the sample's configuration is a single domain. The particular chirality of the single-domain configuration is neither favored nor disfavored by the applied field. Increasing the field leads to an entry of a domain wall loop or a vortex into the sample. Formation of a straight domain wall is never preferred in equilibrium. Values of the entry (critical) fields for both types of defects, as well as the equilibrium size of the domain wall loop, are calculated. The applicability of these results to  $\text{Sr}_2\text{RuO}_4$  – a tentative chiral superconductor – is discussed.

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Victor Vakaryuk  
Argonne National Lab

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