

Abstract Submitted  
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**Topological defects and subgap excitations in two-band superconductors**<sup>1</sup> KIRILL SAMOKHIN, MICHELLE PRZEDBORSKI, Brock University — Phase solitons are topological defects peculiar to two-band superconductors, which are associated with a  $2\pi$  winding of the relative phase of the two superconducting condensates. The order parameter phase variation in each of the bands leads to the quasiparticle bound states whose energies are below the bulk gap. We calculate the single soliton energy as well as the interaction energy of two solitons, at arbitrary temperature. Applications to a similar system – one or more domain walls in a chiral  $p$ -wave superconductor – are discussed.

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