

Half-quantum vortices (HQVs) can exist in a superconductor or superfluid with an exact or approximate $U(1) \times U(1)$ symmetry, for instance in spinor condensates, $^3\text{He-A}$, Sr_2RuO_4 , and possibly cuprate superconductors with stripe order. In this paper, we show that a lattice of HQVs can be stabilized at finite temperature even when it does not have lower energy than the lattice of full vortices at $T = 0$ since there is a gain in configurational entropy when a full vortex fractionalizes into a pair of HQVs. Specifically, the lattice of HQVs has an optical branch of phonon modes absent in the lattice of full vortices. Moreover, the HQV lattice at $T > 0$ can have a different structure than the HQV lattice at $T = 0$.