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Vortex lattice structures of spin triplet superconductors DANIEL AGTERBERG, University of Wisconsin - Milwaukee, SUK BUM CHUNG, Stanford University, EUN-AH KIM, Cornell University — Motivated by recent interest in spin triplet superconductors, we investigate the vortex lattice structures for this class of unconventional superconductors. We discuss how the order parameter symmetry can give rise to $U(1) \times U(1)$ symmetry in same sense as in spinor condensates, making the half- quantum vortex ($1/2$ -qv) topologically stable. We then calculate the vortex lattice structure of $1/2$ -qv's, with particular attention on the roles of the crystalline lattice, the Zeeman coupling, and Meissner screening, all absent in spinor condensates. Finally, we consider how spin-orbit coupling leads to a breakdown of the $U(1) \times U(1)$ symmetry and the fate of the $1/2$ -qv lattice. As examples, we consider models for spin-triplet superconductivity in Sr_2RuO_4 and more speculative spin-triplet models for $Na_xCoO_2 \cdot yH_2O$ and Bechgaard salts.

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