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Abstract for an Invited Paper
for the MAR14 Meeting of
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Lars Onsager Prize: Topological Defects in Condensed Matter Phases

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Circulation quantization in superfluid 4He and superconductors. General principles of classification of topologically stable defects in ordered media. Superfluid phases of 3He. Topology at different scales of length. Superfluids under rotation. Biaxial nematics. Nonabelian disclinations. Half-quantum vortices: 3He-A, Sr₂RuO₄, exciton-polariton condensates, FFLO, Super Solid.