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Abstract for an Invited Paper
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Shiba lattices as novel platforms for topological superconductivity

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I will discuss forms of topological superconductivity that can arise when the surface of a bulk superconductor is decorated with a one- or two-dimensional lattice of magnetic or nonmagnetic impurities. For example, if magnetic impurities order ferromagnetically and the superconducting surface supports a sufficiently strong Rashba-type spin-orbit coupling, Shiba sub-gap states at impurity locations can hybridize into Bogoliubov bands with non-vanishing, sometimes large, Chern number C. This topological superconductor supports C chiral Majorana edge modes. I will discuss phase diagrams for model two-dimensional superconductors, both in the limit of dilute and dense magnetic impurity lattices. To address potential experimental systems, stable configurations of ferromagnetic iron atoms on the Pb (111) surface are identified and it is proposed that ferromagnetic adatoms on Pb surfaces can provide a versatile platform for two-dimensional topological superconductivity. In the one-dimensional case, I will cover both the physics of magnetic and nonmagnetic impurity chains on the surface of conventional and unconventional superconductors.