

**Topological
superconductivity in
transition metal
dichalcogenides**

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The quest for material realization of topological superconductors is fueled by the potential application in quantum computation. Yet, intrinsic topological superconductors are rare to date. Here, I will discuss why monolayer transition metal dichalcogenides (TMD) are promising candidates for topological superconductors with two examples. First is the hole-doped non-centrosymmetric TMDs, where the unusual 'spin-valley locking' favors chiral superconductivity with possible spatial modulation. Second is the gated centrosymmetric WTe_2 , which could be the first material realization for inversion-protected topological crystalline superconductors featuring 'higher-order' Majorana corner modes. Finally, I will discuss how the proposed topological superconductivity can be tested in experiments.

