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Josephson junctions of candidate topological crystalline insulator Pb1-xSnxTe RODNEY SNYDER, CHRISTIE TRIMBLE, Univ of Maryland-College Park, PATRICK TAYLOR, Army Research Lab, JAMES WILLIAMS, Univ of Maryland-College Park — Incorporating superconducting ordering through proximity effects in topological states of matter offers potential routes to novel excitations with properties beyond that of simple electrons. Topological crystalline insulators TCI offer alternative routes to topological states of matter with surface states of distinct character to those in more common 3d topological insulators. We report on the fabrication Josephson junctions using MBE-grown candidate TCI material Pb-doped SnTe as weak links and characterize the departures from conventional junctions using combined DC and RF techniques. Opportunities to create junction weak links from materials possessing electronic interactions will be discussed.

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