

Abstract Submitted
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Things that make TiSe_2 superconducting IVO PLETIKOSIC, HUIXIA LUO, WEIWEI XIE, ELIZABETH SEIBEL, JASON KRIZAN, ROBERT CAVA, Princeton Univ, TONICA VALLA, Brookhaven National Laboratory — The unusual charge density wave phase in TiSe_2 is accompanied by superconductivity when electron dopants like copper and palladium are intercalated between the layers of this transition-metal dichalcogenide. But when nominally one-electron donors like tantalum and niobium are brought in to replace titanium, $\text{Ti}_{1-x}\text{Ta}_x\text{Se}_2$ is superconducting and $\text{Ti}_{1-x}\text{Nb}_x\text{Se}_2$ not. We investigated by angle-resolved photoemission (ARPES) the origins of this behavior by comparing the electronic band structure of pristine TiSe_2 and the two doped compounds. We question whether the effect can be attributed to the differences in electron doping only.

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