

Abstract Submitted
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Superconductivity in S-doped TiSe₂¹ GILBERTO DE LA PEA MUOZ, SANGJUN LEE, ANSHUL KOGAR, DAVID CASAVANT, KANNAN LU, XIAOLAN SUN, YIZHI FANG, PETER ABBAMONTE, GREGORY MACDOUGALL, University of Illinois at Urbana-Champaign — We have observed superconductivity in resistivity measurements of sulfur-doped TiSe_{2-x}S_x. We studied the SC phase boundary as a function of S-substitution using X-ray scattering to characterize the charge density wave (CDW) phase in these samples as a function of doping and temperature. A charge density wave peak persists in the highest doped sample studied, at $x = 1.09$. Our temperature vs. doping phase diagram shows that the SC dome, located at around $x = 0.15$, is well within the boundary of the charge ordered phase, indicating that the dome is not associated with an amplitude quantum critical point.

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