

Abstract Submitted
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From Mott state to superconductivity in 1T-TaS₂ BALAZS SIPOS, ANNA KUSMARTSEVA, HELMUTH BERGER, LASZLO FORRO, EDUARD TUTIS — 1T-TaS₂ is a layered transition metal dichalcogenide (TMD). It exhibits a series of charge-density wave phases, including the only reported Mott phase in TMD material. Under high pressure a series of low temperature electronic states appears: the Mott phase melts into a textured CDW; superconductivity develops within the CDW state with $T_c \sim 5$ K, and survives to very high pressures, insensitive to subsequent disappearance of the CDW state and, surprisingly, also the strong changes in the normal state. This is also the first pristine 1T-TMD compound showing superconductivity.

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