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Muon Spin Rotation Study of Superconducting CsV3Sb5

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CsV3Sb5 is a member of the recently discovered class of Kagome superconductors AV3Sb5 (A=K, Rb, Cs), which provide a rich environment to study topological band structure and charge density wave (CDW) order in an ideal vanadium Kagome lattice. In this work we performed muon spin rotation/relaxation (uSR) measurements on high-quality single crystal samples in the normal and superconducting states. In our measurement of we find no evidence of broken time reversal symmetry behavior associated with the superconducting state. Our measurements of the magnetic field penetration are well described by a two-gap model. Measurements of the normal state reveal changes to the internal field distribution at the muon site below approximately 60K and 30K, indicating the presence of several changes in the electrodynamics of CsV3Sb5 in addition to its charge density wave and superconducting order.

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