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**Kondo destruction and pairing enhancement in the single and two impurity SU(2) symmetric Bose-Fermi Anderson model** ANG CAI, QIMIAO SI, Rice University — Experiment on heavy fermion superconductor CeRhIn<sub>5</sub> provides evidence of an underlying Kondo destruction quantum critical point (QCP) near the superconducting regime. Motivated by the experimental results, we studied the single impurity and two impurity SU(2) symmetric Bose-Fermi Anderson model with a vector bosonic bath, whose spectral function vanishes as a power-law. Using a recently developed continuous time quantum Monte Carlo algorithm [PRB 87 125102], in the single impurity problem we confirmed the epsilon expansion result [PRB 66 024426] of the existence of a critical phase and a Kondo destruction QCP. We further studied the two impurity model, coupled via an antiferromagnetic RKKY interaction, and a bosonic bath to the difference of their spin, both in an SU(2) symmetric way. We have identified the transition from the Kondo screened phase to an impurity singlet phase or a local moment phase. In both cases, the singlet pairing susceptibility is enhanced on the verge of Kondo destruction. Together with related work on the two impurity Anderson model with Ising anisotropy [PRB 91 201109 (R), arXiv:1604.06449], our results suggest pairing enhancement being a robust feature of Kondo destruction QCP, and also help elucidating the role of spin symmetry on the pairing tendency.

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