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Entanglement entropy near Kondo-destruction quantum critical points TATHAGATA CHOWDHURY, CHRISTOPHER WAGNER, KEVIN INGERSENT, Univ of Florida, JEDEDIAH PIXLEY, University of Maryland — Entanglement entropy is a measure of quantum-mechanical entanglement across the boundary created by partitioning a system into two subsystems. We study this quantity in Kondo impurity models that feature Kondo-destruction quantum critical points (QCPs). Recent work [1] has shown that the entanglement entropy between a Kondo impurity of spin S_{imp} and its environment is pinned at its maximum possible value $S_e = \ln(2S_{\text{imp}} + 1)$ throughout the Kondo phase. In the Kondo-destroyed phase, where the impurity spin acquires a nonzero expectation value M_{loc}, $S_e = \ln(2S_{\text{imp}} + 1) - a(S_{\text{imp}})M_{\text{loc}}^2$ irrespective of the properties of the host. Here, we report numerical renormalization-group results for Kondo models with a pseudogapped density of states under a different partition that separates the impurity and on-site conduction electrons from the rest of the system. Now, the entanglement entropy is affected by the nature of the environment beyond the information contained in M_{loc}, but S_e still contains a critical part that exhibits power-law behavior in the vicinity of the Kondo-destruction QCP. [1] J. H. Pixley *et. al.*, Phys. Rev. B **91**, 245122 (2015).

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