Theory of Composite Paring in Yb doped CeCoIn$_5$\textsuperscript{1} ONUR ERTEN, PIERS COLEMAN, Rutgers University — Recent experiments on the \( R \) \((R=\text{La, Yb})\) doped CeCoIn$_5$ have yielded fascinating results. La, which acts as an inert cation kills superconductivity rapidly\cite{1}, whereas superconductivity is much more robust in the case of Yb doping\cite{2}. Experiments also show that unlike La, Yb is in a mixed valent state for all concentrations of doping. Motivated with these experiments, we investigate the effects of doping and disorder on composite paring by diluting two channel Kondo lattice model. This talk will discuss the doping dependence of the coherence temperature and \( T_c \) and various possibilities for the discrepancies between thin films and bulk samples. \cite{1} S. Nakatsuji \textit{et al}. Phys. Rev. Lett. \textbf{89}, 106402 (2002) \cite{2} L. Shu \textit{et al}. Phys. Rev. Lett \textbf{106}, 156403 (2011)

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Onur Erten
Rutgers University

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