

Abstract Submitted  
for the MAR08 Meeting of  
The American Physical Society

**Two Channel Kondo Effect and Superconductivity in Pu and Np compounds** REBECCA FLINT, MAXIM DZERO, PIERS COLEMAN, Rutgers University — Recently, superconductivity has been observed in two heavy fermion compounds,  $\text{PuCoGa}_5$  and  $\text{NpPd}_5\text{Al}_2$ , which transition directly from unquenched spins into the superconducting state, without passing through an intermediate heavy fermi liquid. These two compounds can be modeled with the two channel Kondo model, where the two channels derive from virtual valence fluctuations of different crystal symmetries. The electron-spin scattering develops an Andreev component, creating a composite bound state of a spin-flip and a triplet pair of electrons. This process can be examined in a controlled fashion with symplectic N, with the maximum transition temperature occurring when the two channels have equal strengths. We will also discuss the effect of Pu doping on the superconducting transition temperature of  $\text{NpPd}_5\text{Al}_2$ .

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Date submitted: 27 Nov 2007

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