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**Search for a ferromagnetic quantum criticality in  $\text{YbIn}_{1-x}\text{Rh}_x\text{Cu}_4$**  Y. TOKIWA, F. RONNING, V. FRITSCH, R. MOVSHOVICH, J.D. THOMPSON, J.L. SARRAO, Los Alamos National Laboratory, Los Alamos, New Mexico 87545, USA — The geometrically frustrated system  $\text{YbIn}_{1-x}\text{Rh}_x\text{Cu}_4$  is investigated in order to search for a quantum criticality associated with ferromagnetic correlations. The undoped  $\text{YbInCu}_4$  undergoes a first-order isostructural valence transition at 42K. The valence transition is suppressed with Rh substitution of  $x \sim 0.3$  and ferromagnetic correlations grow with increasing Rh content as can be seen from the increasing Weiss temperature in magnetic susceptibility. We report low temperature specific heat measurements down to 50mK on  $\text{YbIn}_{1-x}\text{Rh}_x\text{Cu}_4$  with  $x$  around suspected critical concentration  $x \sim 0.6$  and discuss the relation between the ferromagnetic correlations and non-Fermi liquid behavior.

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