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Chiral RKKY interaction in Pr2Ir2O7 REBECCA FLINT, T. SENTHIL, Massachusetts Institute of Technology — $Pr_2Ir_2O_7$ experimentally realizes a chiral spin liquid selected out of a degenerate quantum spin-ice manifold. We propose that such a chiral state is selected by an analogue of the magnetic RKKY effect, whereby the chiral fluctuations of conducting Ir electrons close to a Mott transition promote correlations between the chirality of the local Pr moments. $Pr_2Ir_2O_7$ provides the perfect setting for such a *chiral RKKY* effect, as its spin ice manifold naturally contains chiral states, and chiral fluctuations in the Ir are enhanced by the proximity to the metal insulator transition between $Pr_2Ir_2O_7$ and $Nd_2Ir_2O_7$. We calculate the chiral susceptibility within a simplified model, showing that this chiral RKKY coupling can be ferro-chiral and estimating the magnitude.

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