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Mean-Field Study of MIT Suppression in Pr-227 via Rare Earth Magnetism[1] KYLE SHERMAN, Binghamton University — We report on a stability study of the metal-insulator transition in the pyrochlore iridates at zero kelvin. The purpose of this study has been to determine how the insulating state may be suppressed in Pr2Ir2O7 due to the frustrated Pr magnetism. Our model incorporates itinerant Ir electrons and their correlations, spin-orbit coupling, and effects of the localized Pr spins. We have included a Kondo interaction between sub-lattices and an antiferromagnetic interaction between neighboring Pr spins. Our phase diagram demonstrates tuning among the paramagnetic, 2i2o, 3i1o, and AiAo configurations as well as a metal to insulator transition.

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