

Abstract Submitted  
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**Correlated Itinerant Electrons in Pyrochlore  $\text{Bi}_2\text{Ir}_2\text{O}_7$** <sup>1</sup>

G. CAO, O.B. KORNETA, T.F. QI, Department of Physics and Astronomy and Center for Advanced Materials, University of Kentucky, XI-ANGANG WAN, Department of Physics, Nanjing University, Nanjing, China — Strong spin-orbit coupling in the  $5d$ -based iridates rigorously competes with other relevant energies, and motivates novel insulating states. Therefore, a metallic state does not commonly occur in the iridates, but the unusual balance between different degrees of freedom in the iridates almost guarantee that it will exhibit extraordinary properties when it does occur. Here we report anomalous transport and thermodynamic properties including Hall effect of single-crystal  $\text{Bi}_2\text{Ir}_2\text{O}_7$  along with our electronic structure calculations utilizing a LSDA+U scheme. The results will be discussed along with comparisons drawn with other pyrochlore iridates and related materials.

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