

Abstract Submitted
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**The anomalous Hall effect and Nernst effect in $\text{CuCr}_2\text{Se}_{4-x}\text{Br}_x$:
First principles studies** ZHONG FANG, YUGUI YAO, Institute of Physics, Chinese Academy of Sciences — The non-vanishing Berry curvature of Bloch states in ferromagnetic crystals with spin-orbit coupling (broken time reversal symmetry) can act as gauge field in the momentum space, which in turn affects the transport behavior of electrons in real space, and produces the fascinating phenomena in solid crystals. Typical example is the intrinsic anomalous Hall effect (IAHE). Recent progresses in this field not only deepen our understanding of the physics behind, but also enable quantitative evaluations of the effects from the parameter-free electronic structure calculations. In this presentation, the recent progresses in this field will be addressed with emphasis on the quantitative evaluations of IAHE and Nernst effect in ferromagnetic spinel $\text{CuCr}_2\text{Se}_{4-x}\text{Br}_x$ from the first- principles calculations.

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