

Abstract for an Invited Paper
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Berry phase effects on electronic properties¹

QIAN NIU, University of Texas at Austin

Geometric phase has found wide applications in physics, and has emerged as a unifying concept in describing and predicting electronic properties in solids. In this talk, I will review recent advances on Berry phase effects in insulators, metals, and semiconductors, with topics covering dielectric, magnetic, and transport properties. I will also discuss non-abelian generalization of the geometric phase concept and applications in spin transport.

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- [3]. D. Culcer, Y.G. Yao, and Q. Niu, Phys. Rev. B **72**, 085110 (2005).

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