Anomalous properties of Dirac electrons under weak magnetic field

Hidetoshi Fukuyama
Tokyo University of Science, 1-3 Kagurazaka, Shinjuku-ku, Tokyo 162-8601, Japan
Email: fukuyama@rs.kagu.tus.ac.jp

In this talk, I will first touch upon how Dirac electrons emerge in solids in general and then report the results of theoretical studies regarding the inter-band effects of magnetic field on Dirac electrons leading to anomalous properties of orbital magnetism and Hall effect [1,2,3] to be compared with experiments.