

## Commutation Effect in Bismuth Type Semimetals

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### Abstract

The dependence of the Nernst-Ettingshausen longitudinal effect on the direction of the magnetic field for the case of semimetals is studied theoretically and experimentally. A quite unique correspondence is found between the anisotropy of the effect and the band structure near the Fermi level. It is shown that the commutation effect which determines the dependence of the magneto-thermo-e.m.f. magnitude on the direction of the induction vector, permits to judge about the number and localization of band extrema in the k-space. This is an effective way for studying band structures of bismuth and its alloys at high temperatures.

*Keywords: semimetals, magnetic fields, bismuth, alloys*

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