

第501回基礎科学セミナー

日時：2月4日（月） 13:30～15:00

場所：先端基礎研究交流棟1階 第1会議室

講演者：岸根 順一郎 教授（放送大学）

演題：Coherent sliding dynamics and spin motive force driven by crossed magnetic fields in a chiral helimagnet

We demonstrate that the chiral soliton lattice formed from a chiral helimagnet exhibits a coherent sliding motion when a time-dependent magnetic field is applied parallel to the helical axis, in addition to a static field perpendicular to the helical axis. To describe the coherent sliding, we use the collective coordinate method and a numerical analysis. We also show that the time-dependent sliding velocity causes a time-varying Berry cap which creates a spin motive force. A salient feature of the chiral soliton lattice is the appearance of a strongly amplified spin motive force which is directly proportional to the macroscopic number of solitons (magnetic kinks).

Ref: J. Kishine, I. G. Bostrem, A. S. Ovchinnikov, and V. E. Sinitsyn, Phys. Rev. B 86, 214426 (2012).

<問い合わせ先>

先端基礎研究センター 量子物性詩論研究G
森 道康 (81-3508)