



量子物理学・ナノサイエンス第 87 回特別セミナー

Combining magnetism and topology: from magnetic doping to novel interfaces and intrinsic magnetic topological insulators

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- 日程** : 5 月 23 日 (火) 11:00-12:00
- 場所** : 本館 2 階 290 物理学系輪講室

概要

In this talk, I will overview the developments in the field of magnetic topological insulators (MTIs) that led to the discovery of the intrinsic MTIs of the MnBi_2Te_4 family that attracts a great deal of attention nowadays. First, to describe the context in which materials such as MnBi_2Se_4 and MnBi_2Te_4 appeared in the research arena, I will discuss the magnetic doping and magnetic proximity effect approaches of introducing magnetism into a TI. Then, the two types of novel and promising interfaces involving $\text{MnBi}_2\text{Te}(\text{Se})_4$ compounds will be discussed, as they are expected to show certain advantages over the latter two approaches. Next, the discovery of intrinsic MTIs of the $\text{MnBi}_2\text{Te}(\text{Se})_4$ family will be overviewed. Finally, concerning current challenges of this field, we will consider in detail the issue of the Dirac point gap in the MnBi_2Te_4 topological surface state that has caused a lot of controversy recently.

Ref: M. M. Otrokov *et al.*, Nature **576**, 416–422 (2019).

M. Garnica, M. M. Otrokov *et al.*, npj Quantum Materials **7**, 7 (2022).

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