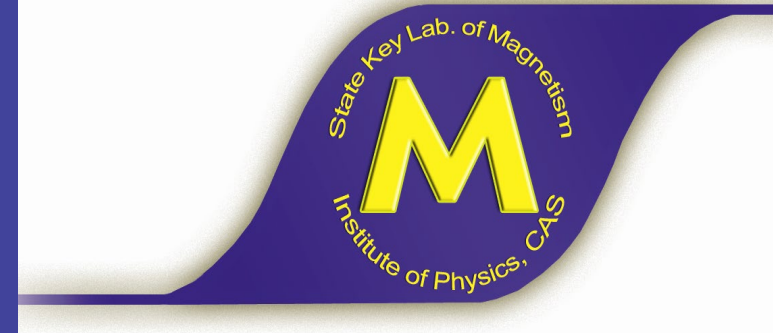
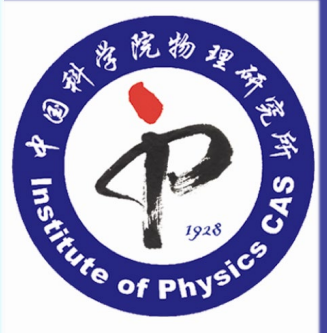




Emergent phenomena in topological magnets and altermagnets

报告人: **Shinichiro Seki**

东京大学 应用物理系(Department of Applied Physics, The University of Tokyo)

报告人简介

Shinichiro Seki received his Ph.D. in Applied Physics from The University of Tokyo in 2010 and has served as a Professor in the Department of Applied Physics at the same university since 2024. During this period, he held positions as Assistant Professor (2010–2012), Lecturer (2012–2013), and Associate Professor (2019–2024) at the university, as well as Unit Leader at RIKEN (2013–2019). He was awarded the IUPAP Young Scientist Prize in Magnetism in 2018. His research fields are condensed matter physics and inorganic chemistry, with a particular focus on the exploration of magnetic materials exhibiting novel functional properties. He has published about 80 research papers, including over 20 in Science and Nature family journals.



报告摘要

Recently, geometrical properties of materials (such as topology, symmetry and dimensionality) are considered as key factors for realizing novel electronic functionalities. Usually, the behavior of electrons is controlled by the external electric and magnetic fields. On the other hand, in materials with geometrically nontrivial orders, electrons can experience giant “emergent” electromagnetic fields, and their effective use can dramatically change the way to control electron dynamics. A typical example is magnetic skyrmion, i.e., vortex-like swirling spin texture with topologically-stable particle character, which is known to host giant topological Hall and magneto-optical responses arising from spin chirality mechanisms. Another example is altermagnets, i.e., antiferromagnets with broken time-reversal symmetry, which realizes ferromagnet-like functional responses even without net magnetization. In this talk, I will introduce recent advances in the development of such exotic magnetic materials and discuss their unique functional responses [1-6].

- [1] R. Takagi, S. Seki et al., Nature Materials 24, 63 (2025).
- [2] H. Yoshimochi, S. Seki et al., Nature Physics 20, 1001 (2024).
- [3] H. Takagi, S. Seki et al., Nature Physics 19, 961 (2023).
- [4] S. Seki et al., Nature Materials 21, 181 (2022).
- [5] N. D. Khanh, S. Seki et al., Nature Nanotechnology 15, 444 (2020).
- [6] S. Seki et al., Science 336, 198 (2012).

报告时间: 2026年5月29日10:00

报告地点: D楼206会议室

联系人: 龙有文 (9873)

