



量子物理学・ナノサイエンス第 70 回特別セミナー

## Resonant Photovoltaic Effect in Doped Magnetic Topological Materials

- 講師** : **Professor Dimitrie Culcer**  
University of New South Wales, Sydney, Australia
- 日程** : 11 月 5 日 (火) 11:00–12:00
- 場所** : 本館 2 階 284A 物理学系輪講室

### 概 要

The non-linear optical response of clean undoped semiconductors contains a static intrinsic term - the shift current. We have recently shown that when Kramers degeneracy is lifted, the second order dc response of doped topological materials and semimetals to an ac electric field becomes large at the interband absorption threshold in clean nearly isotropic materials. We refer to this effect, which results from an interesting interplay between inter-band coherence and intra-band occupation number response, as the resonant photovoltaic effect (RPE). We evaluate the RPE for a model of the surface states of  $\text{Bi}_2\text{Te}_3$  coupled to in-plane magnetic order due to either bulk doping or proximity coupling [1].

1. Pankaj Bhalla, Allan H. MacDonald, and Dimitrie Culcer, arXiv: 1910.06570

**連絡教員** 物理学系 村上 修一 (内線 2747)