



### Weekly Seminar

## Topological Superconductivity in Various Topological Materials

### Masatoshi Sato

*Kyoto University*



**Time: 4:00Pm, Nov. 7, 2018 (Wednesday)**

**时间: 2018年11月7日 (周三) 下午4:00**

**Venue: Room W563, Physics building, Peking University**

**地点: 北京大学物理楼, 西563会议室**

#### Abstract

The discovery of topological insulators opens a new avenue for exploring new states of matters. Not just by their characteristic gapless surface states, but also by their rather strong spin-orbit coupling, topological materials realize an ideal platform for unconventional physical phenomena. In this talk, I will explain how various topological materials can exhibit various different kinds of topological superconductivity. In particular, I will explain a variety of topological superconductivity in Dirac semimetals [1-6].

- [1] S. Kobayashi, M. Sato, Phys. Rev. Lett. 115, 187001 (2015).
- [2] T. Hashimoto, S. Kobayashi, Y. Tanaka, M. Sato, Phys. Rev. B94, 014510 (2016).
- [3] M. Oudah et al, Nature Commu. 7, 13617 (2016)
- [4] T. Kawakami, T. Okamura, S. Kobayashi, M. Sato, arXiv:1802.09962 to appear in Phys. Rev. X.
- [5] P. Zhang et al, arXiv:1809.09971, Nature Physics, online (2018)
- [6] T. Kawakami, M. Sato, in preparation.

#### About the speaker

##### Education:

1991 Mar. Graduated from Kyoto University

1991 Apr.-1993 Mar. Master of Science, Physics, at Department of Physics, Kyoto University

1993 Apr.-1996 Mar. Doctor of Science, Physics, at Department of Physics, Kyoto University

##### Career:

1996 Apr.-1996 Sep. Postdoc Fellow, at Department of Physics, Kyoto University

1996 Oct. -1997 Mar. Postdoc Fellow, at Yukawa Institute for Theoretical Physics, Kyoto University

1997 Apr.-1999 May JSPS\* Fellow, at Department of Physics, University of Tokyo

1999 Jun.-2007 Mar. Research Associate, at Institute for Solid State Physics, University of Tokyo

2007 Apr.-2012 May Assistant Professor, Institute for Solid State Physics, University of Tokyo

2012 Jun.-2015 May Associate Professor, Department of Applied Physics, Nagoya University

2015 Jun -present Full Professor, Yukawa Institute for Theoretical Physics, Kyoto University

##### Specialization:

main field, Quantum Field Theory, Condensed Matter .