Curriculum Vitae

Shu Suzuki

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Experience

October 2018–March 2022: Postdoctoral fellow (JSPS OS) at the University of Twente,

– Researching the nonequilibrium transport in Dirac systems.

October 2018–March 2022: Postdoctoral fellow (JSPS PD) at Nagoya University,

- Researching the nonequilibrium transport and odd-frequency Cooper pairs.
- Inverse proximity effect by odd-frequency Cooper pairs in ferromagnet-superconductor junctions.

April 2018–September 2018: Postdoctoral fellow at the University of Twente,

– Researching the transport of topological materials with Majorana bound states.

April 2017–March 2018: Postdoctoral fellow at Nagoya University, Japan Science and Technology Agency

- Researching the realization of quantum computations using Majorana bound states.
- Numerical and analytic calculations on superconductor/topological-insulator junctions.

April 2015–March 2017: Research Fellowships for Young Scientists (JSPS DC2) at Hokkaido University,

- Research on superconductors with anomalous paramagnetism by odd-frequency Cooper pairs.
- Elucidating the properties of odd-frequency Cooper pairs; novel composite particle.
- Numerical simulations on the magnetic response of mesoscopic superconductors.

April 2014–March 2015: Research Assistant (Part-time job), Hokkaido University

- Numerical simulations on the magnetic response of small high- T_c superconductors.
- Analytic calculations about quasiclassical theory.

April 2012–March 2015: Teaching Assistant (Part-time job), Hokkaido University

- Explaining analytical mechanics to physics bachelor students.
- Supervising experiments on diffraction of light and electronic transport properties.
- Helping master students with simulating quantum phenomena such as time-evolution and scattering.

Education

• 2014-2017: Doctor course in Applied Physics, Hokkaido University

Besides acquiring scientific knowledge and learning communication skills such as writing and giving presentations, I also collaborated a lot with international researchers, including Russian and Dutch researchers. I went to a number of international conferences and worked on a project about novel superconductivity in Italy. When communicating with a broad range of international researchers, I always felt inspired by cooperation with international researchers because of their different viewpoints. Additionally, I supervised several master students.

• 2012-2014: Master course in Applied Physics, Hokkaido University

Constructing theoretical models for describing physical phenomena, which are sufficiently simple but represent the actual phenomena in great detail. Developing an algorithm for finite-size superconductors. Expanding my knowledge to advanced applied physics such as quantum field theory and semi-conductor engineering.

• 2010-2012: Bachelor course in Applied Physics, Hokkaido University

A broad education on the fundamentals of physics, including quantum mechanics, solid-state physics, optics, numerics, and computer science.

• 2005-2010: Associate Degree in Mechanics Engineering, Asahikawa National College of Technology A unique high school specialized in engineering. The education system focuses on laying a good foundation for topics such as mechanics, fluid dynamics, metallurgical technology, and computer science.

Recent Publications (Full list is in my web page)

- "Magnetic Response of Mesoscopic Unconventional Superconductors", <u>S.-I. Suzuki</u> and Y. Asano, Topologica **3** (Accepted for publication).
- "Anomalous inverse proximity effect in unconventional superconductor junctions", <u>S.-I. Suzuki</u>, T. Hirai, M. Eschrig, and Y. Tanaka, Physical Review Research 3, 043148 (2021).
- "Proposal for identifying possible even-parity superconducting states in Sr₂RuO₄ using planar tunneling spectroscopy",
 S. Ikegaya, S.-I. Suzuki, Y. Tanaka, and Dirk Manske, Physical Review Research 3, L032062 (2021).
- "Tunneling conductance of the (d + ip)-wave superconductor",
 Y. Takabatake, <u>S.-I. Suzuki</u>, and Y. Tanaka, Physical Review B 103, 184515 (2021).
- "Identifying possible pairing states in Sr₂RuO₄ by tunneling spectroscopy", <u>S.-I. Suzuki</u>, M. Sato, and Y. Tanaka, Physical Review B **101**, 054505 (2020).
- "Effects of phase coherence on local density of states in superconducting proximity structures", <u>S.-I. Suzuki</u>, A. A. Golubov, Y. Asano, and Y. Tanaka, Physical Review B **100**, 024511 (2019).

Awards & Grants

- 2020: Poster Preview Award, International Conference on Topological Materials Science 2019,.
- 2019: Best Poster Award, International conference "OSS2019 Oxide Superspin Workshop 2019".
- 2016: Researcher Exchange Program, Grant-in-Aid "Topological Materials Science".
- 2016: Best Posters, International conference on Strongly Correlated Electron Systems.
- 2015: Grant-in-Aid for JSPS Fellows, Japan Society for the Promotion of Science.
- 2015: [‡]Exemption from restitution of the scholarship, Japan Student Services Organization.
- 2014: Poster Award, International conference on Topological Quantum Phenomena.
- 2014: **Poster-Preview Award**, International conference on Topological Quantum Phenomena.
- 2012: Award of Department of Applied Physics, Hokkaido University.

Additional Skills

- Languages: Japanese (Native), English (Business).
- Computer skills: Linux/Unix, MATLAB, Octave, C/C++, Fortran, MS Office, IAT_EX, Adobe Illustrator, Inkscape, Gnuplot.

Personal interests

- **Travelling:** I like to experience and explore different cultures. I engaged in international collaborations with researchers from Italy, Russia, and the Netherlands. This fall, I went on a holiday to the Netherlands.
- Sports: Volleyball and baseball. As a high school student, I was the team captain of a volleyball club for four years. When I was a student at Hokkaido University, I joined two baseball teams. At the moment, I am participating in a baseball competition for students and researchers at Nagoya University.
- **Other:** Photography, cooking, playing jazz guitar, and reading.

[‡] In Japan, it is customary for students to borrow money to pay their school fees (including the PhD course). However, a limited number of students who show excellent achievements is exempted from restitution.