

Jinhoon Jeong

Postdoctoral researcher

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Education

2015–2023 **PhD in Physics**, KAIST, Daejeon, South Korea

Advisor: Hyungsoon Choi

2011–2015 **BS in Physics**, KAIST, Daejeon, South Korea

Minor in Cultural Technology

Professional experience

2023– **Postdoctoral researcher**, KRISS, Daejeon, South Korea

NST Research Fellowship Program for Young Scientists

Skills

- Nano- and micro-fabrication of mechanical devices
 - Silicon nitride membrane devices
 - Lithium niobate on insulator based surface acoustic resonators
 - Niobium based drum-head electromechanical resonators(work on progress)
- Low temperature experiments
 - Experiences with dilution refrigerators.
 - Limited experiences with a demagnetization refrigerator.
- Numerical simulations
 - Experiences in python, C, and matlab.
 - Experiences in commercial software such as COMSOL and Sonnet.

Research interests

- Macroscopic quantum behavior of mechanical resonators
- Fundamental limits of mechanical sensors[2]
- Superconducting electronics and its applications[3]
- Thermodynamics of quantum machines(in future)

Publications

- [1] HeeSu Byun, Jinhoon Jeong, Kitak Kim, Sang Goon Kim, Seung-Bo Shim, Junho Suh, and Hyungsoon Choi. Measuring angular momentum of $p_x + ip_y$ topological superfluids: A proposal. *Physical Review B*, 98(2):024518, July 2018. Publisher: American Physical Society.
- [2] Jinhoon Jeong, Junho Suh, and Hyungsoon Choi. Angular momentum sensitivity of

a MEMS gyroscope for condensed matter systems. *Physica Scripta*, 98(6):065925, May 2023. Publisher: IOP Publishing.

- [3] Younghun Ryu, Jinhoon Jeong, Junho Suh, Jihwan Kim, Hyoungsoo Choi, and Jinwoong Cha. Utilizing Gate-Controlled Supercurrent for All-Metallic Tunable Superconducting Microwave Resonators. *Nano Letters*, 24(4):1223–1230, January 2024.

Presentations

- 2019.04 **J. Jeong**, J. Suh, H. Choi, *Spectroscopic Gyroscope Experiments: Building an Intrinsic Angular Momentum Sensor*, 2019 KPS Spring Meeting, April.
- 2016.04 **J. Jeong**, S Kim, H. Byun, S. Sim, J. Suh, H. Choi, *Realistic Method of Detecting Majorana Edge Modes in Superfluid*, 2016 KPS Spring Meeting, April.

Teaching Experience

- Spring 2015 **Teaching assistant**, KAIST, PH141(D) General Physics I
- Fall 2015 **Teaching assistant**, KAIST, PH142(A) General Physics II
- Spring 2016 **Teaching assistant**, KAIST, PH601 Applied Physics Lab. I
- Spring 2017 **Teaching assistant**, KAIST, PH311 Thermal Physics
Best TA award