Koichiro Takahashi

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Department of Physics and Astronomy

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Project and Publication:

1. Yibo Zhang, Suman Itani, Kamal Khanal, Emmanuel Okyere, Gavin Smith, **Koichiro Takahashi**, Jiadong Zang, "GPTArticleExtractor: An automated workflow for magnetic material database construction", Journal of Magnetism and Magnetic Materials, 2024, 172001, ISSN 0304-8853, https://doi.org/10.1016/j.jmmm.2024.172001 .

2. "Nonlinear dynamics of skyrmion confined in one dimension"
Supervisor: Sergey Pershoguba, Jiadong Zang
Partially funded by Summer Undergraduate Research Fellowships (SURF)
Presented preliminary results at Undergraduate Research Conference (URC) at UNH

3. "Tight-binding calculation of MnTe, altermagnet"
Supervisor: Jiadong Zang

Research and Experience:

05/2023-Present	Research Assistant in the Theoretical Condensed Matter Physics Group at UNH Supervisor: Jiadong Zang, Sergey Pershoguba
07/2024	2024 US Quantum Information Science Summer School (USQIS) At Oak Ridge National Laboratory (ORNL) July 14-26 Elective lectures and keynote presentations were given at advanced graduate levels Topics: Quantum computing, quantum sensing, quantum simulations, topological quantum algorithm, topological superconductors, quantum spin liquids, DMRG, measurement-induced phenomena, etc.

Research Interests:

Condensed Matter Theory, Quantum Field Theory, Topological Quantum Matter, Strongly Correlated Electrons System, Quantum Hall Effects, Superconductivity, Magnetism, Skyrmionics, Quantum Information, Machine Learning, Complexity, Information Theory, Non-Equilibrium Dynamics

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Computational Skills:

Languages: Python, Mathematica, (Julia)

Independent Seminars:

01/2024-04/2024   UNH Graduate Theoretical Physics Seminar Spring 2024
Presentation, Title: "Dynamics of Magnetic Skyrmion"

01/2024-03/2024   Group Theory and Algebraic Geometry Seminar
with Michael Lathwood, PhD student at UNH
Weekly Seminar of Group Theory and Algebraic Geometry

Education:

08/2023-Present   Transfer Undergraduate Physics Student (4th-year), Class of 2025
Department of Physics, University of New Hampshire, USA
GPA: 4.0

08/2022-05/2023   Exchange Student in Physics at UNH
Located in Durham, New Hampshire, USA
Stayed for 2 semesters, GPA: 4.0

04/2021-08/2022   BSc in Physics at Saitama University (SU) (Transferred to UNH)
Located in Sakura-ku, Saitama, Japan
Class of 2025, Earned 73 Credits
GPA: 3.71 (Top of my class)

04/2018-03/2021   High School Diploma in General Course at Shinjuku High School
Located in Shinjuku, Tokyo, Japan

Scholarships:

05/2024-08/2024   Summer Undergraduate Research Fellowships (SURF)
Received: $4,000
For 10 weeks of summer research on campus at UNH

05/2024   Karsten Pohl Scholarship
Received: $4,660
From the College of Engineering & Physical Sciences at UNH
"For academic excellence and for advancing the University's goal
 of enhancing the educational experience through enrollment of a
diverse student body"

08/2023-Present   Transfer Excellence Scholarship
Received: $2,500 (per semester) $\times$ 4 semesters

From the Admission Committee of UNH

08/2022-05/2023   Gyomu Super Japan Dream Foundation Scholarship
                   Received: ¥1,200,000 (9 months)
                   During study exchange at UNH

10/2022-08/2023   Exemption of Tuition Fee at Saitama University
                   Applies for students who has outstanding academic performance

04/2022-08/2023   Japan Student Services Organization (JASSO) Scholarship

Awards:

Dean's list in Highest Honors at UNH for outstanding academic performance
Received Semesters: 2022 Fall, 2023 Spring, 2023 Fall, 2024 Spring

Outstanding Grade Award from the Physics Department of Saitama University
Received Years: 2021, 2022; the award given to the top of my class

Extracurricular Activities:

08/2022-Present   UNH Men's Volleyball Club; Position: Outside Hitter/Libero
                   Played in tournaments held at Boston College, UMass Lowell etc.

Leadership Experience:

08/2024   Office of the International Students and Scholars (OISS) Orientation
           Leader (OL) in 2024 Fall
           Worked as one of the OLs for new international students at UNH

Personal Information:

Date and Place of Birth: January 10, 2003; Tokyo, Japan
Citizenship: Japan
Language Skills: Japanese (Native), English (Fluent)