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## 1 Background

### 1.1 Education

**PhD in Theoretical Physics** 2016-2021, The University of Alabama - USA, Tuscaloosa  
**Study Abroad in JYPE** 2014-2015, Tohoku University - Japan, Sendai  
**BS in Engineering Physics** 2012-2016, The Colorado School of Mines - USA, Golden

### 1.2 Appointments/Employments

**JSPS Postdoc** August 2023 - August 2024  
Yamagata University  
**Technical Consultant** January 2023 - May 2023  
Quantum Data Center  
**Technical Consultant** August 2022 - May 2023  
quantumz.io  
**Postdoc** 2022 - 2023  
Henan University  
**Contract Tutor** 2017 - 2021  
Appliedtutoring.com  
**PhD Student** 2016 - 2021  
The University of Alabama  
**Graduate Teaching Assistant** 2016 - 2021  
The University of Alabama

## 2 Research

### 2.1 Publications (Including Preprints)

*2024* - **Holographic Global Vortices with Novel Boundary Conditions**  
arXiv:[2404.03212](#)  
*2024* - **Relativistic hydrodynamics under rotation: Prospects and limitations from a holographic perspective**  
[10.1016/j.ppnp.2024.104135](#) - arXiv:[2308.11686](#)

2023 - Modes of the Sakai-Sugimoto soliton  
[10.1088/1751-8121/ad742c](https://arxiv.org/abs/2306.00677) - arXiv:2306.00677

2023 - Convergence of hydrodynamics in rapidly spinning strongly coupled plasma  
[10.1103/PhysRevD.108.046014](https://arxiv.org/abs/2112.10781) - arXiv:2112.10781

2022 - Chaos and pole-skipping in a simply spinning plasma  
[10.1007/JHEP02\(2023\)253](https://arxiv.org/abs/2211.00016) - arXiv:2211.00016

2020 - Hydrodynamics of simply spinning black holes & hydrodynamics for spinning quantum fluids  
[10.1007/JHEP12\(2020\)112](https://arxiv.org/abs/2007.04345) - arXiv:2007.04345

2020 - Resonating AdS soliton  
[10.1007/JHEP08\(2020\)136](https://arxiv.org/abs/2006.12783) - arXiv:2006.12783

2019 - Dispersion relations in non-relativistic two-dimensional materials from quasinormal modes in H $\ddot{o}$ rava Gravity  
[10.1007/JHEP10\(2019\)087](https://arxiv.org/abs/1905.11993) - arXiv:1905.11993

## 2.2 Given Talks

<b>Solitons at Work (Invited)</b> <i>Online</i>	November, 2024
<b>Research Seminar</b> <i>Tokyo Institute of Technology</i>	May, 2024
<b>Research Seminar</b> <i>Keio University</i>	May, 2024
<b>Research Seminar</b> <i>Chuo University</i>	May, 2024
<b>Rising Researchers Seminar (Invited)</b> <i>Online</i>	April, 2024
<b>International Workshop on Noncommutative Integrable Systems</b> <i>Online</i>	March, 2024
<b>Holotube (Invited)</b> <i>Online</i>	December, 2023
<b>Online Workshop on Topological Solitons</b> <i>Online</i>	September, 2023
<b>Research Seminar</b> <i>Tokyo University</i>	February, 2020
<b>Research Seminar</b> <i>Ochanomizu University</i>	February, 2020
<b>Research Seminar</b> <i>Chuo University</i>	February, 2020
<b>Research Seminar</b> <i>W<math>\ddot{u}</math>rzburg University</i>	July, 2019
<b>Frankfurt Institute for Advanced Studies</b> <i>W<math>\ddot{u}</math>rzburg University</i>	July, 2019
<b>3rd Karl Schwarzschild Conference</b> <i>W<math>\ddot{u}</math>rzburg University</i>	July, 2017

## 3 Teaching Experience

**Special Lectures on Special Relativity** - Spring 2024  
 Yamagata University - *informal lectures taught in Japanese*

**PH 255: Modern Physics Laboratory** - Spring 2021  
 The University of Alabama - *as a graduate teaching assistant*

**PH 255: Modern Physics Laboratory** - Fall 2020  
 The University of Alabama - *as a graduate teaching assistant*

**PH 102: General Physics II** - Summer 2020  
 The University of Alabama - *two classes were taught*

**PH 125: Honors General Physics with Calculus I** - Fall 2019  
 The University of Alabama - *as a graduate teaching assistant*

**PH 255: Modern Physics Laboratory** - Fall 2018  
 The University of Alabama - *as a graduate teaching assistant*

**Tutoring Session (College Math and Physics)** - Fall 2018 - Spring 2021

Applied Tutoring - *taught privately for around 5hrs a week at the University of Alabama*

**PH 125: Honors General Physics with Calculus I** - Fall 2016

The University of Alabama - *as a graduate teaching assistant*

**PH 105: General Physics with Calculus I** - Fall 2016 - Spring 2021

The University of Alabama - *as a graduate teaching assistant for 0-2 classes per year*

**PH 106: General Physics with Calculus II** - Fall 2016 - Spring 2021

The University of Alabama - *as a graduate teaching assistant for 0-2 classes per year*

## 4 Recognition and Honors

### 4.1 Awards

**Japanese-Language Proficiency Test (JLPT) N2** 2023  
**Level Certification**

**Japan Society for the Promotion of Science** 2023  
**Fellowship**

*Yamagata University*

**Outstanding Research by a Master's Student** 2020

*The University of Alabama*

**JASSO Scholarship** 2014

*Tohoku University*

**Private Scholarship** 2008

*Pagosa Springs High School*

### 4.2 Memberships

**President** 2017 - 2021

*Physics and Astronomy Graduate Physics Association  
of the University of Alabama*

**Secretary** 2017 - 2020

*Japanese American Cultural Exchange Club of the  
University of Alabama*

## 5 Miscellaneous

### 5.1 Skills

- Known Languages
  - English (Native)
  - Japanese (Conversational/JLPT N2)
- Programming Languages
  - Python (+5 years)
  - Julia (+5 years)
  - Mathematica (+10 years)
  - Go (1 year)
  - C (1 year)
- Mathematical Knowledge
  - Smooth Optimization (+5 years)
  - Dynamical Systems (+5 years)
  - Linear and Non-linear Programming (+5 years)
  - Model Building (+5 years)
  - Differential Geometry and Topology (+5 years)
- Familiar Technologies

- Git, SVN, Github, and version control
- Word and word processors
- Inkscape and graphic editing applications
- Sheets and spreadsheet applications
- LaTeX
- make and build systems
- LLM model
- AWS, Cloudflare, Google, and Cloud Technologies

## 5.2 Detailed Experiences

I have experience...

- working on programming projects remotely as part of a team. (Quantum Data Center, quantumz.io)
- collaborating on research projects with a team of researchers. (Colorado School of Mines, The University of Alabama, Henan University, Yamagata University)
- leading a classroom of university students as lecturer. (for either formal and informal lecture series) (The University of Alabama, Yamagata University)
- teaching university level physics and mathematics. (Colorado School of Mines, The University of Alabama, Henan University, Yamagata University)

## 5.3 References

**Minoru Eto** (Yamagata University, Professor) *was my Postdoc Advisor*

meto@sci.kj.yamagata-u.ac.jp

**Sven Bjarke Gudnason** (Henan University, Distinguished Professor) *was my Postdoc Advisor*

gudnason@henu.edu.cn

**Matthias Kaminski** (The University of Alabama, Associate Professor) *was my PhD Advisor*

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