Markus A.G. Amano

CV

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iNSPIREHEP

Contents

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

Assistant Professor 2025 - Present
National Institute of Technology Oyama College
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 - arXiv:2306.00677
2023 - **Convergence of hydrodynamics in rapidly spinning strongly coupled plasma**
10.1103/PhysRevD.108.046014 - arXiv:2112.10781
2022 - **Chaos and pole-skipping in a simply spinning plasma**
10.1007/JHEP02(2023)253 - arXiv:2211.00016
2020 - **Hydrodynamics of simply spinning black holes & hydrodynamics for spinning quantum fluids**
10.1007/JHEP12(2020)112 - arXiv:2007.04345
2020 - **Resonating AdS soliton**
10.1007/JHEP08(2020)136 - arXiv:2006.12783
2019 - **Dispersion relations in non-relativistic two-dimensional materials from quasinormal modes in Hořava Gravity**
10.1007/JHEP10(2019)087 - arXiv:1905.11993

2.2 Given Talks

Strings and Fields	July, 2025
Kyoto University	
Holographic Applications (INVITED)	July, 2025
University of Chinese Academy of Sciences at Beijing	
Solitons at Work (INVITED)	November, 2024
Online	
Research Seminar	May, 2024
Tokyo Institute of Technology	
Research Seminar	May, 2024
Keio University	
Research Seminar	May, 2024
Chuo University	
Rising Researchers Seminar (INVITED)	April, 2024
Online	
International Workshop on Noncommutative Integrable Systems	March, 2024
Online	
Holotube (INVITED)	December, 2023
Online	
Online Workshop on Topological Solitons	September, 2023
Online	
Research Seminar	February, 2020
Tokyo University	
Research Seminar	February, 2020
Ochanomizu University	
Research Seminar	February, 2020
Chuo University	
Research Seminar	July, 2019
Würzburg University	
Frankfurt Institute for Advanced Studies	July, 2019
Würzburg University	
3rd Karl Schwarzschild Conference	July, 2017
Würzburg University	

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 Level Certification 2023

Japan Society for the Promotion of Science Fellowship 2023
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*
mski@ua.edu