Eslam Sabry Mohamadean Abdulmageed Ahmed

Contact Information

Room 377, School of Engineering Building 3

Department of Applied Physics,

Nagoya University

Chikusa-ku, Nagoya 464-8602

Japan

RESEARCH Interests

• Exotic phases in strongly interacting systems:

Fractional quantum hall effect, topological materials, Edge physics(Bulk-Edge correspondence), Luttinger liquids, Bosonization, Floquet engineering

• Quantum computer engineering:

Braiding of Majorana zero modes and parafermion zero modes.

EDUCATION

Nagoya University, Nagoya, Japan

2022–2025 (Expected)

Last update: December 14, 2022

Homepage:rover.nuap.nagoya-u.ac.jp/index-e

⊠E-mail:eslam@rover.nuap.nagoya-u.ac.jp

Doctorate of Engineering in Applied Physics

Advisor: Prof. Yukio Tanaka.

Nagoya University, Nagoya, Japan

2020 - 2022

Masters of Engineering in Applied Physics

Advisor: Prof. Yukio Tanaka.

Nagoya University, Nagoya, Japan.

2016-2020

Bachelor of Science in Physics.

Thesis: Gauge/Gravity Duality. Advisor: Prof. Masaharu Tanabashi

Research EXPERIENCE

• PhD research

2022 - 2025

During my PhD, I plan to apply Floquet engineering and bosonization techniques to study topological superconductors, fractional quantum hall systems, and their hetrostructures as a mean to realize non-abelian anyons.

• Masters Thesis 2020 - 2022

I investigated the effects of Floquet Majorana edge modes on the accumelation of odd-frequency pairing amplitude in time-periodic Kitaev topological superconductors.

• Bachelor Thesis: Gauge/Gravity duality

2019-2020

I reproduced the relation developed by Gubser, Klebanov, Polyakov, and Witten and applied it to study the response theory of scalar operators in N=4 supersymmetric Yang-Mill theory(SU(N)) at zero temperature.

Teaching EXPERIENCE

• Teaching Assistant

2019-2022

Department of applied physics, Nagoya University

- o Courses TA'd: Mathematical Physics 1, Quantum Mechanics 3, Statistical Physics 3, Analytical Mechanics 1
- Engaged in discussions with the students during the tutorials
- Graded the students' assignments.

Administrative Assistant

2021 - 2022

EXPERIENCE

Tanaka & Kawaguchi lab, department of applied physics, Nagoya University

- Translated the group website into English
- o Typed lecture notes of professor Tanaka in both Japanese and English

SKILLS AND Hobbies

- Computer Skills: Python, LaTeX.
- Language Skills: Arabic(Native), English(Advanced), Japanese(Intermediate)
- Hobbies: Creative Writing, Science Communication

Honors and Awards

Seventh place at the 1st Egyptian Physics Olympiad
Third place at the 2nd Egyptian physics Olympiad
Participated at the International Physics Olympiad
Received the Egyptian Parliament Medal of Excellence
Recipient of Nagoya University G30 scholarship
Recipient of Al Alfi Foundation's "Leadership & Innovation Program" scholarship
Recipient of KDDI scholarship

References

Prof. Yukio Tanaka

Nagoya University

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Prof. Masaharu Tanabashi

Nagoya University

 \square E-mail:tanabash@eken.phys.nagoya-u.ac.jp

Prof. John Wojdylo

Nagoya University

⊠E-mail:john.wojdylo@s.phys.nagoya-u.ac.jp