Ahmed Khalifa

a.khalifa@uky.edu linkedin Google Scholar

Education

University of Kentucky Lexington, KY, USA

PhD Student in Theoretical Physics August 2025 – Present

Zewail City of Science and Technology Cairo, Egypt

Gradute courses in theoritical physics 2023 – 2024

- Cumulative Grade Point Average (CGPA): 3.83 out of 4.

Faculty of Science, Zagazig University Zagazig, Egypt

Bachelor of Science in Physics Major 2019 – 2023

- Cumulative Grade Point Average (CGPA): 4.1 out of 5 (equivalent to 90.1%).
- Honors: Achieved ”Excellent with Honor” distinction.
- Class Ranking: Second in the graduating class.

Experience

Physics Teaching Assistant August 2025 – Present

University of Kentucky Lexington, KY, USA

CERN Summer Student Intern June 2024 – August 2024

European Organization for Nuclear Research (CERN) Meyrin, Switzerland

- Employment Attestation

Physics and Mathematics Teaching Assistant October 2023 – May 2025

Zewail City of Science and Technology Cairo, Egypt

Research Assistant at the Center of Fundamental Physics (CFP) October 2023 – May 2025

Zewail City of Science and Technology Cairo, Egypt

Skills

</> Python · Mathematica · MadGraph5 · CalcHEP · SPheno · LateX

English (IELTS: 7.5) · Arabic (Native Speaker)

Research Papers

- A. Khalifa, 'Investigation of Lorentz Invariance Violation in Drell-Yan Processes at the LHC', 2024. CDS Record.
  - This research, conducted as part of a project at CERN, investigates potential Lorentz invariance violations in Drell-Yan processes, contributing to the search for physics beyond the Standard Model at the Large Hadron Collider.
  - Supervised by Dr. David Walter and Dr. Kenneth Long.

- A. Abokhalil, 'The Higgs Mechanism and Higgs Boson: Unveiling the Symmetry of the Universe', arXiv [hep-ph], 2023.
  - A second graduation project focused on the Higgs mechanism and its role in particle physics, examining key theoretical concepts. The project received an A+ grade.
  - Supervised by Dr. Alaa Abd El-Hady.

- A. Abokhalil and H. M. Zaki, 'Tracing The Development of Some Solid-State Theories In Quantum Mechanics: A Review of Key Contributions and Progress'. DOI: 10.13140/RG.2.2.31843.84005/3.
  - A first graduation project reviewed the development of foundational theories in solid-state quantum mechanics. The project was awarded an A+ grade.
  - Supervised by Dr. H. M. Zaki.