

Curriculum Vitae (C.V.)

Personal Data



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Educational Qualifications

1996: Ph.D. in Theoretical Physics, Physics Department, Faculty of Science, Ain Shams University, Cairo, Egypt.

Title: *“Existence, Formation and Annihilation of Hydrogen-Antihydrogen Molecules”*

1990: M.Sc. in Theoretical Physics, Physics Department, Faculty of Science, Ain Shams University, Cairo, Egypt.

Title: *“Study of the Propagation and Containment of Cosmic Ray Electrons Within the Galactic Boundaries”*

1986: B.Sc. (Honor) in Physics, Physics Department, Faculty of Science, Ain Shams University, Cairo, Egypt.

Academic Positions

- 2024 - : **Professor of Theoretical Physics**, Physics Department, Faculty of Science, Ain Shams University.
- 2014 – 2024 : **Assistant Professor of Physics**, Physics Department, Faculty of Science, Ain Shams University.
- 2011 – 2014 : **Lecturer of Physics**, Physics Department, Faculty of Science, Ain Shams University, Cairo Egypt.
- 2004 – 2011 : **Lecturer of Physics**, Faculty of Science, Al-Majmaa University, Kingdom of Saudi Arabia.
- 1996 – 2004 : **Lecturer of Physics**, Physics Department, Faculty of Science, Ain Shams University, Cairo Egypt.
- 1990 – 1996 : **Assistant Lecturer**, Physics Department, Faculty of Science, Ain Shams University, Cairo Egypt.
- 1986- 1990 : **Demonstrator**, Physics Department, Faculty of Science, Ain Shams University, Cairo Egypt.

Research Experience

1. Cosmology, Astronomy, and Astrophysics,
2. Many Particle Systems.

Scientific Collaboration

- Member of the Egyptian Network of High Energy Physics (ENHEP), CMS, CERN , since 2013 up to now.
- Member of the Egyptian Syndicate of Scientific Professions.

Teaching Experience

Postgraduate:

- Relativistic Quantum Mechanics
- Mathematical Physics (Linear Algebra)
- Mathematical Physics (Linear Algebra)
- Mathematical Physics (Group Theory)

- Advanced Quantum Mechanics

Undergraduate:

- Special Theory of Relativity
- General Theory of Relativity
- Quantum Mechanics I and II
- Electrodynamics I and II.
- Statistical Physics.
- Mathematical Physics I and II.
- Theory of electromagnetism.
- Waves
- Modern Physics.
- General Physics.
- Programming languages.

Schools, Workshops, and Conferences

- 3rd Summer School and Internship, BUE, 24 July - 3 August 2023.
- 2nd Summer School and Internship, BUE, 3-21 July 2022.
- Workshop on Astro-particles and Gravity, Cairo University, 20-22 September 2022.
- Summer Internship program, BUE, 11-29 July 2021.
- 6th International school of High Energy Physics, BUE, Dec. 2016.
- 3rd International school of High Energy Physics, BUE, April 26- May 3, 2012.
- International Conference on Mathematics, Nuclear Physics and Applications in the 21st Century, Cairo, March 8-13, 2003.
- Workshop on High Energy and Particle Physics, Faculty of Science, Ain Shams Univ., Cairo, Egypt, December 2002, Jun 2003, and December 2003.
- Third School on Non-Accelerator Particle Astrophysics, ICTP, Trieste, Italy, 1993.
- Summer School on High Energy Physics, ICTP, Trieste, Italy, 1993.

Presentations in Conferences

- Presenting at the International Conference on Mathematics, Nuclear Physics and Applications in the 21st Century, Cairo, March 8-13, 2003.

Skills: Computer Experiences

- Symbolic and numeric computing environments: Mathematica and Maple.
- programming languages: FORTRAN, Python, C-language, and Basic.
- Cloud-based team collaboration software: Microsoft Teams.
- Microsoft Office: Word, Excel, Powerpoint, Access.
- Document Preparation System: Latex.
- Graphic Software Programs (Origin).

M.Sc. Supervision/Co-Supervision:

- **Current:**

- 1- Amr Sobhy, Thesis Title: "*Studying the Thermodynamics of Gravitational Solutions in Anti-De Sitter Space*", M. Sc. Thesis, (Expected 2026).
- 2- Ramy Magdy, Thesis Title: "*Contemporary Problems in Cosmology and Possible Solutions via Modified Gravity or Exotic Matter*", M. Sc. Thesis, (Expected 2025).

- **Finished:**

- 3- Merna Ibrahim, Thesis Title: "*Implications of Cosmological Inflation Models in Light of Recent Observations*", M. Sc. Thesis, (2023).
- 4- Ahmad Ismael Husein, Thesis Title: "*Studying of Some Possible textures of the Neutrino Mass Matrix*", M. Sc. Thesis, (2021).
- 5- Asmaa Mahmoud, Thesis Title: "*Phase space analysis of Friedmann Lemaitre Robertson Walker Cosmology*", M. Sc. Thesis, (2021).
- 6- Ashraf Kasem, "*Search for Dark Matter Produced in Association with Neutral Gauge Boson at the LHC*", M. Sc. Thesis, (2017).
- 7- Abrar Salah, "*Study of Collective Behavior Plasma Waves in Degenerate Plasma*", M. Sc. Thesis, (2016).

List of Publications

1. Mohamed Tharwat, Amr AlBarqawy, Adel Awad and **Esraa Elkhateeb**, *Dyonic Taub-NUT-AdS Spaces: Phase Structures of all Horizon Geometries*, Physical Review D **109**, 084026 (2024).
2. **Esraa Elkhateeb**, *Reconstruction of $f(R)$ Gravity from Cosmological Unified Dark Fluid Model*, Foundations of Physics **54:18** (2024).
3. Adel Awad and **Esraa Elkhateeb**, *Dyonic Taub-NUT-AdS: Unconstrained Thermodynamics and Phase Structure*, Physical Review D **108**, 064022 (2023).
4. Merna Ibrahim, Mustafa Ashry, **Esraa Elkhateeb**, Adel M. Awad, Ahmad Moursy, *Modified hybrid inflation, reheating, and stabilization of the electroweak vacuum*, Physical Review D **107**, 035023 (2023).
5. **Esraa Elkhateeb** and Mahmoud Hashim, *Dissipative Unified Dark Fluid: Observational Constraints*, Journal of High Energy Astrophysics, **37**, 3–14, (2023).
6. **Esraa Elkhateeb**, *Dissipative Unified Dark Fluid Model*, International Journal of Modern Physics D, **28**, No. 09, 1950110 (2019).
7. **Esraa Elkhateeb**, *A Viable Dark Fluid Model*, Astrophysics and Space Science, **363**, 7, (2018).
8. **Esraa Elkhateeb**, Amr Radi, Salah Yaseen El-Bakry, and Mahmoud Yaseen El-Bakry, *Modeling Hadronic Collisions Using Genetic Programming Approach*, Advanced studies in theoretical physics, **8**(1), pp 1, (2014).
9. Amr Radi, **Esraa Elkhateeb**, *Modeling p - p and Recent LHC pp Total Cross Sections*, Modern Phys. Lett. A, **29**(8), 1450044 , (2014).
10. Ahmad Elkhateeb, **Esraa Elkhateeb**, *Remarks on the Surface Area and Equality Conditions in Regular Forms Part II: Quadratic Prisms*, Nexus Network Journal, **16**(2), pp. 467–485 (2014).
11. Ahmad Elkhateeb, **Esraa Elkhateeb**, *Remarks on the Surface Area and Equality Conditions in Regular Forms Part IV: Pyramidal Forms*, Nexus Network Journal, **16**(3), pp. 795–811 (2014).
12. **Esraa Elkhateeb**, *Existence of Exotic Proton-Tau Four Particle Systems*, Egyp. J. Phys., Vol. **83**(11), pp 775-798, (2009).
13. **Esraa Elkhateeb**, *Existence of Exotic Proton-kaon Four Particle Systems*, Indian J. Phys., **40**, (2009).

14. **Esraa Elkhateeb**, *Investigation of the stability of some exotic four particle systems*, Bulgarian Journal of Physics, **34**, pp 41-58, (2007).
15. **Esraa Elkhateeb**, *Existence of Exotic Bound States of Four Particles*, Balkan Physics Letters, **14**(2), pp 67-82, (2006).
16. M. Shalaby and **Esraa Elkhateeb**, *Renormalization scale sensitivity of gluonic Higgs Boson Decay*, Balkan Physics Letters, **12**(3), pp 116-140 (2004).
17. H. Ramadan, **Esraa Elkhateeb**, and M. Khalil, *Theoretical lifetimes, resonance energy widths, and branching ratios for isoelectronic sequences of Born-Like ions*, International Conference on Mathematics, Nuclear Physics and Applications in the 21st Century, Cairo, March 8-13, 2003.
18. M. A. Abdel-Raouf, **Esraa Elkhateeb**, and M. M. H. El-Gogary, *Stability of four body molecules*, Proceedings of the Workshop on Structure and Defects of Materials, University of Qatar, Doha, April 15-18, 1996.