



Faculty Name

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Education

D.Sc.	Space Weather and Remote Sensing, Univ. of Alexandria, Egypt	2012
PhD.	Physics, Univ. of New Mexico, USA	1990

Academic Experience

2019 – Present	Associate Professor, CTS (PAAET), Kuwait
2001 – 2018	Professor, Univ. of Alexandria, Egypt
2008 – 2010	Professor, King Abdulaziz Univ., Saudi Arabia
1995 – 1998	Adjunct Professor, The Arab Academy of Science & Technology, Egypt
1994 – 1998	Visiting scientist, Potchefstroom Univ. of CHE, South Africa
1986 – 1990	Research Assistant, Univ. of New Mexico, USA

Certifications or Professional Registrations

- Regional coordinator of Asteroid Day, 2017 – present.
- Principal investigator, the first Micro-Pulse Lidar (MPL), in the Arabian Peninsula, 2013.
- Kuwait, principal investigator for DREAME mineral dust campaign in collaboration with UK and NASA, 2009:
- Completed the Global Muon Detector Network (GMDN) for space weather predictions by installing a Cosmic Ray Muon Telescope in Kuwait and observed the first solar storm ever detected from the Middle East.
- Established the first AEROSOL ROBOTIC NETWORK (AERONET) site at a UNIVERSITY in the Arabian Peninsula in collaboration NASA/Goddard Space Flight Center, 2006.
- Observed the first solar storm ever detected from the Middle East, using Kuwait's Muon Telescope.
- **REVIEWER:** Journal of Atmospheric and Solar-Terrestrial Physics, Earth Systems and Environment, Journal of Geophysical Research, Astrophysics and Space Sciences Transactions, Journal of Space Weather and Space Climate, Planetary and Space Science, Turkish Journal of Physics, Kuwait Foundation for the Advancement of Sciences (KFAS), Solar Physics Journal, Advances in space research, Planetary and Space Science and International Journal of Aerobiology.

Current Membership

- Member, sigma Xi, American Geophysical Union and European Geosciences Union.
- National Coordinators of the International Heliophysical Year (2006 – 2009):

Honors and Awards

- 2017 & 2019 – The highest annual citation index, the best poster index and the highest citation index during the last five years for the College of Health Sciences for the year.
- 2010: Distinguished researcher, Faculty of Science, King Abdulaziz University, Saudi Arabia.
- 2007: Distinguished researcher, Faculty of Science, Kuwait University.
- 2006: The best article of the year award, Kuwait Foundation for the advancement of Sciences.
- 1996 & 2000: National award in Physics, Egypt.
- 1995: Research award, The Foundation for Research Development, South Africa

Service Activities

- “Solar Storm observed from Kuwait: The first ever observation from the Middle East”, College of Technological Studies, Kuwait, 2022.
- “The End of The Universe: The holy Quran and modern astronomy”, College of Basic Education, Kuwait, 20121.
- "A Journey to the Beginning of the Universe", College of Technological Studies, Kuwait, 2021.
- "Characteristics of aerosol particles during major dust storms over Kuwait" I. Sabbah, Third World Congress on GIS and Remote Sensing, Charlotte, North Carolina USA, 2017.
- "Asteroid day" College of Health Sciences, Kuwait, 2017.
- Keynote speaker, Member of Organizing Committee Member, and chairperson at "third World Congress on GIS and Remote Sensing", Charlotte, North Carolina USA, 2017.
- "Observation of the first solar storm ever detected from the Middle East, using Kuwait's Muon Telescope", EPA, 2016.
- Invited speaker and Chairperson, the Fourth Arab International Conference in Physics and Materials Science, Bibliotheca Alexandria, Egypt, 2012.
- Chairperson, Geomagnetic Observatories and their Applications Workshop, Islamabad, 2012.
- Editorial Board, Alexandria Journal of Physics, 2010.
- Keynote speaker and Chairperson, The 8th Space Science and Astronomy in the Gulf Colloquium, Scientific Club, Kuwait, 2008.
- Chairperson, The 21st European Cosmic Ray Symposium, Slovakia, 2008.
- Chairperson, The 5th Asian Aerosol Conference, Taiwan, 2007.
- Chairperson, The 4th Islamic Astronomy Conference, Amman, Jordan, 2006.
- Kuwait, principal investigator, The NASA/ 2004 United Arab Emirates Unified Aerosol Experiment (UAE2), 2004.
- Chairperson, The 40th Annual Conference of the South African, Institute of Physics, University of Western Cape, Cape Town, South Africa, 1995.

Publications

1. “Real-time monitoring of the rigidity spectrum of large Forbush decreases in May and October 2024 with the paired neutron monitor and muon detector at the Antarctic Syowa Station”, Y Hayashi, et al., Earth, Planets and Space 78 (1), 75, 2026.

2. "Ground-based Observations of Temporal Variation of Cosmic Ray Spectrum during Forbush Decreases", W Mitthumsiri, et al., *Astrophysical Journal Letters*, 2025.
3. "Global analysis of the extended decreases in cosmic rays observed with worldwide networks of neutron monitors and muon detectors: Temporal variation of the rigidity spectrum and its implication", K Munakata, Y Hayashi, M Kozai, et al., *The Astrophysical Journal* 974 (2), 283, 2024.
4. "Data mining of cosmic-ray anisotropy observed with the Global Muon Detector Network", M Kozai, Y Hayashi, C Kato, K Munakata, Y Masuda, K Iwai, et al., 38th International Cosmic Ray Conference, 1279, 2024.
5. "Data mining of cosmic-ray anisotropy observed with the Global Muon Detector Network", M Kozai, Y Hayashi, C Kato, K Munakata, Y Masuda, K Iwai, et al., 38th International Cosmic Ray Conference, 1279, 2024.
6. "Global analysis of the extended cosmic-ray decreases observed with world-wide networks of neutron monitors and muon detectors; temporal variation of the rigidity spectrum and its implication", K Munakata, Y Hayashi, M Kozai, C Kato, N Miyashita, R Kataoka, et al., arXiv preprint arXiv:2408.14696, 2024.
7. "North-South Anisotropy of Galactic Cosmic Rays: Proposal for a New Analysis Method", M Kozai, Y Hayashi, C Kato, K Munakata, Y Masuda, K Iwai, et al., AGU Fall Meeting Abstracts 2023, SH04-02, 2023.
8. "Long-lasting cosmic-ray decreases in 2012 observed with global networks of neutron monitors and muon detectors" Y Hayashi, C Kato, K Munakata, Y Masuda, M Kozai, K Ryuho, et al., AGU Fall Meeting Abstracts 2023, SH04-06 2023.
9. "Galactic cosmic ray variations associated with February 2022 "Starlink" magnetic storms observed with global networks of neutron monitors and muon detectors" Y Masuda, C Kato, GMDN collaboration these proceedings 2023.
10. "Large-amplitude Bidirectional Anisotropy of Cosmic-Ray Intensity Observed with Worldwide Networks of Ground-based Neutron Monitors and Muon Detectors in 2021 November" K. Munakata, M. Kozai, C. Kato, Y. Hayashi, R. Kataoka, A. Kadokura, M. Tokumaru, R. R. S. Mendonça, E. Echer, A. Dal Lago, M. Rockenbach, N. J. Schuch, J. V. Bageston, C. R. Braga, H. K. Al Jassar, M. M. Sharma, M. L. Duldig, J. E. Humble, I. Sabbah, P. Evenson, P.-S. Mangeard, T. Kuwabara, D. Ruffolo, A. Sáiz, W. Mitthumsiri, W. Nuntiyakul, J. Kóta, *The Astrophysical Journal*, 938:30 (11pp), DOI: 10.3847/1538-4357/ac91c5 2022.
11. "A Peculiar ICME Event in August 2018 Observed with 2 the Global Muon Detector Network", Kihara, et al., *Space Weather*, 10.1029/2020SW00253 1. 4, 2021.
12. "Analysis of Cosmic Rays Atmospheric Effects and Their Relationships to Cutoff Rigidity and Zenith Angle Using Global Muon Detector Network Data" R. R. S Mendonça, et al., *Journal of Geophysical Research: Space Physics* 124 (12), 9791-9813, 2019.
13. "Dust and dust storms over Kuwait: GROUND-BASED and satellite observations", Ismail Sabbah et al., *Journal of Atmospheric and Solar-Terrestrial Physics*, 179, 105-113, 2018.



14. “The effects of climate on hospitalization for respiratory diseases by age group”, Amaury de Souza, et al., Advanced Studies in Medical Sciences, Vol. 6, 2018, no. 1, 21-35, 2018.
15. “Cosmic-ray short burst observed with the global muon detector network (GMDN) on 2015 June 22”, K Munakata, et al., The Astrophysical Journal 862 (2), 170, 2018.

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