

Curriculum Vitae

Prof. Dr. Eed M. Darwish

Personal Information:



- Name: Eed M. Darwish
- Born: January 31, 1967, Sohag
- Nationality: Egyptian
- Martial Status: Married since March 28, 1993
- Permanent Address: Physics Department, Faculty of Science, Sohag University, Sohag 82524, Egypt
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- Present Address and Position: Professor, Physics Department, Faculty of Science, Taibah University, Al-Madinah Al-Munawarah 41411, P. O. Box 30002, Saudi Arabia
Tel: +966 563167227 Fax: +966 418451994 E-Mail: edarwish@taibahu.edu.sa
- General E-Mails: eeddarwish@yahoo.com and eeddarwish@gmail.com

Academic Qualifications:

- July 2002: PhD degree in Theoretical Nuclear Physics (Dr. rer. nat.), on *Rescattering effects in incoherent photoproduction of π -mesons off deuterium in the $\Delta(1232)$ -resonance region*, Institut für Kernphysik, J. Gutenberg-Universität, Mainz, Germany, as a DAAD scholarship.
Supervisor and first referee: Prof. Dr. H. Arenhövel (J. Gutenberg-Universität)
Second referee: Prof. Dr. M. Reuter (J. Gutenberg-Universität).
- May 1995: MSc degree in Theoretical Nuclear Physics, on *The slope of the neutron form factor $G_{En}(q^2)$ at $q^2=0$* , South Valley University, Sohag Branch, Egypt.
Supervisor and first referee: Prof. Dr. M. M. Mustafa (Sohag University)
Further referees:
Prof. Dr. S. A. E. Khallaf (Assiut University)
Prof. Dr. M. K. H. Hegab (Cairo University).
- May 1990: BSc degree in Physics, Assiut University, Sohag Branch, Egypt

Employment Experiences:

- March 2018 - Now: Professor, Physics Department, Faculty of Science, Taibah University, Saudi Arabia (on leave).
- Sept. 2013 – Feb. 2018: Associate Professor, Physics Department, Faculty of Science, Taibah University, Saudi Arabia (on leave).

- **June 2009 – Dec. 2011: Head of Applied Physics Department, Faculty of Applied Science, Taibah University, Saudi Arabia (on leave)**
- **Oct. 2008 – May 2009: Head of Physics Division, Teacher's College, Taibah University, Saudi Arabia (on leave).**
- **March 2008 - August 2013: Assistant Professor, Physics Department, Faculty of Science, Taibah University, Saudi Arabia (on leave).**
- **Dec. 2018 - Now: Professor, Physics Department, Faculty of Science, Sohag University, Egypt.**
- **Sept. 2013 – Nov. 2018: Associate Professor, Physics Department, Faculty of Science, Sohag University, Egypt.**
- **Jan. 2003 - August 2013: Lecturer, Physics Department, Faculty of Science, Sohag University, Egypt.**
- **May 1998 - Dec. 2002: Assistant Researcher and leader of exercises groups in different undergraduate courses, Institut für Kernphysik, J. Gutenberg-Universität Mainz, Germany as a DAAD scholarship.**
- **April 1997 - April 1998: Assistant Researcher, Institut für Theoretische Physik, Universität Tübingen, Germany as a DAAD scholarship.**
- **July 1995 - Sept. 1996: Assistant Researcher and leader of the practical course titled *Theoretical Physics on the Personal Computer*, Physics Department, Faculty of Science, South Valley University, Sohag Branch, Egypt.**
- **Nov. 1990 - June 1995: Demonstrator and leader of practical physics groups for undergraduate students, Physics Department, Faculty of Science, Assiut University, Sohag Branch, Egypt.**

Teaching Experiences:

- **April 2008 - Now: Teaching the following courses for undergraduate, graduate and postgraduate students at Physics Department of Taibah University, Saudi Arabia:**
 - **General Physics I and II (B. Sc.)**
 - **Atomic and Nuclear Physics (B. Sc.)**
 - **Mathematical Physics I, II, and III (B. Sc.)**
 - **Quantum Mechanics I and II (B. Sc.)**
 - **Nuclear Physics (B. Sc.)**
 - **Special Theory of Relativity (B. Sc.)**
 - **Vibrations and Waves (B. Sc.)**
 - **Numerical Analysis (B. Sc.)**
 - **Elementary Particles (B. Sc.)**
 - **Physical Applications using Computer (B. Sc.)**
 - **Quantum Mechanics (M. Sc.)**
 - **Advanced Quantum Mechanics (M. Sc.)**
 - **Scattering Theory (M. Sc.)**
 - **Advanced Mathematical Physics (M. Sc.)**
 - **Advanced Statistical Mechanics (M. Sc.)**
 - **Advanced Nuclear Physics (M. Sc.)**

- Computational Techniques (M. Sc.)
- Special Topics in Theoretical Physics (M. Sc.)
- Selected Topics in Nuclear Physics (M. Sc.)
- Computational Physics (M. Sc.)
- Sept. 2002 - March 2008: Teaching the following courses for undergraduate, graduate and postgraduate students at Physics Department of Sohag University, Egypt:
 - Quantum Mechanics I and II
 - Computer Applications in Physics
 - Mathematical Methods for Physicists
 - Physical Measurements using the Personal Computer
 - Theoretical Nuclear Physics
 - Numerical Analysis
 - Electricity and Magnetism
- Jan. 2005 - Sept. 2005: Participating in the Experimental Science and Technology Education Project (ESTEP) by teaching computer courses for high school teachers.
- May 1998 - July 2002: Tutored of problem courses for the students accompanying the following lectures of Prof. Dr. D. Drechsel and Prof. Dr. H. Arenhövel at Mainz University, Germany:
 - Classical Mechanics
 - Quantum Mechanics
 - Thermodynamics and Statistical Physics
 - Electrodynamics and Classical Field Theory

Supervision of MSc and PhD students:

- [1] Khaled M. A. Aly (MSc Thesis):
Determination of the Neutron-Proton Triplet Scattering Length
Sohag University, Egypt (MSc completed, May 31, 2004).
- [2] Mohamed A. El-Zohry (MSc Thesis):
The Gerasimov-Drell-Hearn Sum Rule for the Nucleon
Sohag University, Egypt (MSc completed, March 29, 2005).
- [3] Rashwan M. Ibrahim (MSc Thesis):
Photoemission of Pions from Nucleons using Polarized Beams and Targets
Assiut University, Egypt (MSc completed, Feb. 2, 2010).
- [4] Marwa M. Abd El-Wahab (MSc Thesis):
Polarization observables in elastic electron-deuteron scattering
Aswan University, Egypt (MSc completed, Sept. 27, 2011).
- [5] Mohamed A. El-Zohry (PhD Thesis):
Model description of observables for coherent π^0 -photoproduction on the deuteron
Yerevan Institute of Physics, Yerevan State University, Armenia (PhD completed, July 8, 2011).
- [6] Norhan N. Mahrous (MSc Thesis):
Effect of local and nonlocal NN potential models on polarization observables in elastic e-d scattering
Aswan University, Egypt (MSc completed, July 2018).
- [7] Fahd A. Alhazmi (MSc Thesis):
Polarization observables in elastic e-d scattering and their dependence on the nucleon structure and deuteron wave functions
Taibah University, Saudi Arabia (MSc completed, Sept. 2018).

- [8] Maha E. M. Alsehly (MSc Thesis):
Polarization observables in coherent π^0 -photoproduction from the deuteron in the near threshold region
Taibah University, Saudi Arabia (MSc not completed).
- [9] Reham A. I. Ameerfi (MSc Thesis):
Nucleon pole contributions in the $\gamma d \rightarrow \pi^0 d$ reaction
Taibah University, Saudi Arabia (MSc not completed).

Computer Skills:

- Operating Systems: Linux and Windows.
- Programming: FORTRAN (77, 90, Absoft and MS) and Matlab.
- Writing: Latex, MS Word, MS PowerPoint, and Scientific Workplace.
- Drawing: GNUPlot, XFig, XMGrace, Origin, Maple, and MS Excel.

Languages:

- Arabic: native (Mother language)
- English: fluent
- German: fluent

Honors:

- Recipient of the Scientific Publishing Prize for distinguished research by Faculty of Science, Taibah University, Saudi Arabia, 2015.
- Recipient of the Scientific Publishing Prize for distinguished research by Faculty of Applied Science, Taibah University, Saudi Arabia, 2013.
- Recipient of a research grant (proposal No. 403/430) from the Deanship for Scientific Research of Taibah University, 2009.
- Included in Marquis Who's Who in Science and Engineering, 9th Edition, December 2006 and 10th Anniversary Edition, December 2007, USA.
- Recipient of a research grant with total fund of 45000 EGP from the Center for Special Studies and Programs (CSSP) of the Bibliotheca Alexandrina, Egypt.
- Recipient of one year scholarship from the German Research Foundation (Sonderforschungsbereich 'SFB 443') at the Institut für Kernphysik, J. Gutenberg-Universität Mainz, Germany (July 1, 2001 -- July 31, 2002).

- Recipient of three years promotion scholarship from the German Academic Exchange Service (DAAD) at the Institut für Kernphysik, J. Gutenberg-Universität Mainz, Germany (May 2, 1998 -- June 30, 2001).
- Recipient of one year scholarship from the German Academic Exchange Service (DAAD) at the Institut für Theoretische Physik, Universität Tübingen, Germany (April 1, 1997 -- May 1, 1998).
- Director of the Egyptian Students' Union, Mainz University, Germany (1999-2001).
- Award as a ``Very Good'' ranked student from Faculty of Science, Assiut University, Egypt in 1989 and 1990.

Membership in Professional Societies:

- Associate Member of the European Center for Theoretical Studies in Nuclear Physics and Related Areas (ECT*) since April 2007.
- Associate Member in Quarterly Franklin Membership (ID: QQ93251) since Nov. 2018.
- Associate Member of the Saudi Center for Theoretical Physics (SCTP), KFUPM, Dhahran, Saudi Arabia since April 2009.
- Associate Member of the Egyptian Center for Theoretical Physics (ECTP) - Center of Excellence, Modern University for Technology and Information (MTI), Cairo, Egypt since July 2008.
- Member of the Research Center@Teacher's College, Taibah University, Saudi Arabia during April 2008 - March 2009.
- Member of the Egyptian Physicists Association since 2008.
- Member of the American Physical Society since 2007.
- Member of the DAAD-Alumni since 2006.
- Member of the International Hadronic Physics Topical Group since 1999.
- Member of the International Baryon Resonance Analysis Group since 1999.
- Member of the Egyptian Physical Society since 1995.
- Member of the Sohag Association for protecting and developing the environment since 1991.
- Member of the Egyptian Syndicate of Scientific Professions (ESSP) since 1990.
- Director of the Egyptian Students' Union at Mainz University, Germany during 1999-2001.
- Member of the German Physical Society during 1998-2003.

Research Interests:

My research plans are devoted to the study of sub-nuclear degrees of freedom in electromagnetic reactions in few-body systems, mainly the deuteron. This interest is partly due to the new generation of high-intensity and high duty-cycle electron accelerators as well as laser backscattering facilities, such as HIGS, Jefferson Lab, and LEGS in USA, MAMI, ELSA, and HERMS in Germany, GRAAL in France, and MAX-Lab in Sweden. With the developments of these new facilities, it is now possible to obtain accurate data for meson electromagnetic production, including spin-dependent observables.

The possible investigations of this research highlights are focused on the following problems:

- Study of photo- and electro-production of pseudo-scalar mesons from the deuteron including final-state interactions and two-body effects.
- Explicit evaluation of the spin asymmetry and the associated Gerasimov-Drell-Hearn (GDH) sum rule for the nucleon and deuteron.
- Investigation of polarization observables in electromagnetic interactions on nucleon and light nuclei including final-state interaction effects.
- Electroweak pion production reaction from the deuteron including neutrino reaction and electron scattering taking into account nuclear effects and reaction dynamics.
- Study of elastic electron-nucleon and electron-deuteron scattering processes including polarization effects and electromagnetic form factors.

These investigations are of theoretical interest because it provides an important test of our present understanding of the elementary neutron amplitude in the absence of a neutron target.

Statistics of Research Profiles:

- **GOOGLE SCHOLAR** (for only 79 Publications):
h-index: 11 i10-index: 13 Citations: 384

Scientific Visits Abroad:

- Physics Department, Faculty of Science, King Fahd University of Petroleum and Minerals, Saudi Arabia (May 2-4, 2009).
- Physics Department, Faculty of Science, Qassim University, Saudi Arabia (May 27-29, 2008 and Feb. 17-25, 2009).
- Physics Department, Faculty of Science, United Arab Emirates University, United Arab Emirates, (November 25-30, 2007).
- Kernfysisch Versneller Instituut (KVI), Groningen, Netherlands (July 22-26, 2002).

- Joint research work had been done with P. Pedroni, INFN, Pavia, Italy, during his visits to the Institut für Kernphysik, Universität Mainz, Germany (April, 2002 -- July, 2002). Results of this Collaboration have been presented in the Master Thesis of C. A. Rovelli, University of Pavia, Italy.
- Institut für Theoretische Physik II, Universität Bochum, Germany (June 13-14, 2002).
- Institut für Kernphysik, J. Gutenberg Universität Mainz, Germany (May 1, 1998 -- July, 2002).
- Institut für Theoretische Physik, Universität Tübingen, Germany (April 1, 1997 -- April 30, 1998).

Scientific Collaborators:

- E. Moya de Guerra, J. M. Udias and C. Fernandez-Ramirez (Madrid University, Spain)
- T.-S. Harry Lee (Argonne National Laboratory, USA)
- A. Sandorfi (Brookhaven National Laboratory, USA)
- T. Sato (Osaka University, Japan)
- P. Pedroni (INFN, Pavia, Italy)
- H. Arenhoevel and M. Schwamb (Johannes Gutenberg University, Germany)
- V. V. Gauzshtein, A. Yu. Loginov, B. I. Vasilishin, and M. Ya. Kuzin (National Research Tomsk Polytechnical University, Russia)
- D. M. Nikolenko, I. A. Rachek, R. Sh. Sadykov, S. A. Zevakov, A. V. Bogomyagkov, A. N. Zhuravlev, S. E. Karnev, V. A. Kiselev, E. B. Levichev, O. I. Meshkov, S. I. Mishnev, I. N. Okunev, P. A. Piminov, E. A. Simonov, S. V. Sinyatkin, E. V. Starostina (Budker Institute of Nuclear Physics, Novosibirsk, Russia)
- Yu. V. Shestakov, D. K. Toporkov (Novosibirsk State University, Russia)
- M. I. Levchuk and M. N. Nevmerzhtsky (Belarus National Academy of Sciences, Belarus)
- N. Akopov (Yerevan Physics Institute, Armenia)
- A. Salam (Indonesia University, Indonesia)
- M. Y. Hussein (Bahrain University, Bahrain)
- S. S. Al-Thoyaib (Qassim University, Saudi Arabia)
- M. M. Almarashi, Kh. S. Alsadi, E. M. Mahrous, F. A. Alhazmi, M. E. Alsehli, and R. Alamry (Taibah University, Saudi Arabia)
- A. S. Aldobuani (King Abdulaziz University, Saudi Arabia)
- H. Al-Ghamdi and E. S. Almogait (Princes Nourah bint Abdulrahman University, Saudi Arabia).
- H. F. A. Alshrani (King Khalid University, Saudi Arabia)
- B. Abu Sal (Tafila Technical University, Jordan)
- H. M. Mansour and M. Saleh Yousef (Cairo University, Egypt)
- S. A. E. Khallaf, M. El-Azab Farid, G. S. Hassan, and R. M. Ebrahim (Assiut University, Egypt)

- M. M. Mustafa, E. M. A. Sultan, M. A. Shehata, Kh. S. A. Hassaneen, H. M. Abou-Elsebaa, Kh. M. Ahmed, M. El-Zohry, S. Abdel-Khalek (Sohag University, Egypt)
- A. Hemmdan, M. Anwar Zaki, K. O. Behairy, M. M. Abd El-Wahab, and N. N. Mahrous (Aswan University, Egypt)
- N. T. El-Shamy (Ain Shams University, Egypt)
- M. A. Hassanain and Zakaria M. M. Mahmoud (New-Valley University, Egypt)
- A. A. Ibraheem (Al-Azhar University, Assiut, Egypt)

Peer-Review Activities:

- Reviewer for Journal of Physics G: Nuclear & Particle Physics
- Reviewer for Journal of Physics B: Atomic, Molecular, and Optical Physics
- Reviewer for Canadian Journal of Physics
- Reviewer for Physica Scripta
- Reviewer for Chinese Physics Letters
- Reviewer for Modern Physics Letters A
- Reviewer for Indian Journal of Physics
- Reviewer for Journal of Advances in Physics
- Reviewer for Open Physics Journal
- Reviewer for Journal of Natural Sciences and Mathematics
- Reviewer for Applied Mathematics and Information Sciences
- Reviewer for Applied Mathematics and Physics
- Reviewer for Journal of Engineering and Technology Research
- Reviewer for International Journal of Physical Sciences
- Reviewer for Journal of King Abdulaziz University (Sciences)
- Reviewer for Journal of Taibah University for Science
- Reviewer for International Journal of New Horizons in Physics
- Reviewer for Journal of Environmental Studies of Sohag University
- Reviewer for three scientific books in Theoretical Physics.
- External Reviewer for several MSc and PhD theses at Sohag, Aswan, Taif, and King Khalid Universities.
- Reviewer for many of research projects submitted to the Deanship of Scientific Research at Taibah, Taif, Umm Al-Qura, Islamic, and King Khalid Universities, KSA.
- Reviewer for many scientific research projects for B. Sc. Students submitted to the 1st, 2nd, 3rd, 4th, 5th, 6th, 7th, and 8th Scientific Forum.

Editorial Board Member:

- International Journal of New Horizons in Physics: An International Journal
- Quantum Physics Letters: An International Journal
- Sohag Journal of Sciences: An International Journal
- Research International Journal of Physics and Mathematical Sciences

- International Journal of Physics

Editor-in-Chief:

- Research International Journal of Physics and Mathematical Sciences, MSD Publications
- International Journal of Physics, International Digital Organization for Scientific Information (IDOSI)

Participation in Scientific Conferences and Workshops:

- 5th Annual Science Day, -----, 2020, Faculty of Science, Sohag University, Egypt.
- 4th Annual Science Day, March 5, 2019, Faculty of Science, Sohag University, Egypt.
- 6th International Saudi Meeting on Frontiers of Physics (SIMFP2018), February 27-March 1, 2018, Jazan University, Saudi Arabia.
- 3rd Annual Science Day, April 19, 2018, Faculty of Science, Sohag University, Egypt.
- 2nd Annual Science Day, April 19, 2017, Faculty of Science, Sohag University, Egypt.
- 1st Annual Science Day, April 20, 2016, Faculty of Science, Sohag University, Egypt.
- 4th International Saudi Meeting on Frontiers of Physics (SIMFP2015), February 17-19, 2015, Jazan University, Saudi Arabia.
- 4th International Conference on Mathematics and Information Science (ICMIS2015), February 5-7, 2015, Zewail City of Science and Technology, Sheikh Zayed District, 6th of October City, Egypt.
- 5th Saudi Physical Society Meeting on *Horizons of Energy Physics (SPS5)*, October 25-27, 2020, King Khalid University, Abha, Saudi Arabia.
- 4th Saudi Science Conference on *Contribution of Science Faculties in the Development Process of KSA*, March 21-24, 2010, Taibah University, Medina, Saudi Arabia.
- 2nd Meeting on *Theoretical Physics*, May 3, 2009, Saudi Center for Theoretical Physics, King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia.
- 4th Meeting of the Saudi Physical Society, November 11-12, 2008, King Abdulaziz City for Science and Technology (KACST), Riyadh, Saudi Arabia.
- UAE-CERN Workshop on *High Energy Physics and Applications*, November 26-28, 2007, United Arab Emirates University, Al-Ain, United Arab Emirates.
- 6th International NUPPAC`07 Conference on *Nuclear and Particle Physics*, November 17-21, 2007, Luxor, Egypt.
- CTP Summer School on *Computational Techniques and Applications*, September 9-11, 2007, Center for Theoretical Physics, British University, Egypt.
- 2nd Cairo International Conference on *High Energy Physics (CICHEP II)*, German University in Cairo (GUC), January 14-17, 2006, Cairo, Egypt.

- 5th International NUPPAC`05 Conference on *Nuclear and Particle Physics*, November 19-23, 2005, Ain Shams University, Cairo, Egypt.
- Einstein 2005 Symposium, June 4-6, 2005, Bibliotheca Alexandrina, Egypt.
- 4th International NUPPAC`03 Conference on *Nuclear and Particle Physics*, October 11-15, 2003, Fayoum University, Egypt.
- International Conference on *Mathematics, Nuclear Physics and Applications in the 21th Century*, March 8-13, 2003, Cairo, Egypt.
- MAMI and ELSA Meeting, May 16-17, 2002, Institut für Kernphysik, J. Gutenberg-Universität Mainz, Germany.
- 66th Nuclear Physics Spring Meeting: Frühjahrstagung der Deutschen Physikalischen Gesellschaft (DFG): *Physik der Hadronen und Kerne*, March 11-15, 2002, Münster University, Germany.
- 3rd International NUPPAC`01 Conference on *Nuclear and Particle Physics*, October 20-24, 2001, Cairo, Egypt.
- 18th Students' Workshop on *Electromagnetic Interactions*, September 2-7, 2001, Bosen (Saar), Germany.
- 65th Nuclear Physics Spring Meeting: Frühjahrstagung der Deutschen Physikalischen Gesellschaft (DFG): *Physik der Hadronen und Kerne*, March 19-23, 2001, Erlangen University, Germany.
- N*2001 Workshop on *The Physics of Excited Nucleons*, Institut für Kernphysik, J. Gutenberg-Universität Mainz, March 7-10, 2001, Germany.
- 17th Students' Workshop on *Electromagnetic Interactions*, September 3-8, 2000, Bosen (Saar), Germany.
- Symposium on *The Gerasimov-Drell-Hearn (GDH) Sum Rule and the Spin Structure in the Resonance Region (GDH2000)*, Institut für Kernphysik, J. Gutenberg-Universität Mainz, June 14-17, 2000, Germany.
- 64th Nuclear Physics Spring Meeting: Frühjahrstagung der Deutschen Physikalischen Gesellschaft (DFG): *Physik der Hadronen und Kerne*, March 20-24, 2000, Dresden University, Germany.
- Program of the H3-Meeting on *Strange hadrons-strangeness in strongly interacting particles*, March 16-17, 2000, Institut für Kernphysik, J. Gutenberg-Universität Mainz, Germany.
- Program of the 3rd H2-Meeting on *Status and Future of $N \rightarrow \Delta$ Physics*, December 16, 1999, Institut für Kernphysik, J. Gutenberg-Universität Mainz, Germany.
- 16th Students' Workshop on *Electromagnetic Interactions*, September 5-10, 1999, Bosen (Saar), Germany.
- Program of the 2nd H2-Meeting, *Meson Photoproduction on Light Nuclei*, July 1, 1999, Institut für Kernphysik, J. Gutenberg-Universität Mainz, Germany.
- Program of the 1st H1-Meeting, *Nucleon Structure*, May 20, 1999, Institut für Kernphysik, J. Gutenberg-Universität Mainz, Germany.

- 63th Nuclear Physics Spring Meeting: Frühjahrstagung der Deutschen Physikalischen Gesellschaft (DFG): *Physik der Hadronen und Kerne*, March 22-26, 1999, Freiburg University, Germany.
- 15th Students' Workshop on *Electromagnetic Interactions*, September 6-11, 1998, Bosen (Saar), Germany.
- Program of Special Research Area 201 of the German Research Foundation (Sonderforschungsbereich 'SFB 201'), *Medium Energy Physics with Electromagnetic Interaction*, July 9-10, 1998, Institut für Kernphysik, J. Gutenberg-Universität Mainz, Germany.

Colloquia and Seminars:

- *Developments on the Theory of Electromagnetic Processes in Few-Nucleon Systems*
Egyptian Center for Theoretical Physics (ECTP), Modern University for Technology and Information (MTI), Cairo, Egypt, August 24, 2008.
- *Recent Developments on the Theory of Electromagnetic Processes in Few-Nucleon Systems*
Center for Theoretical Physics, British University, Egypt, January 15, 2008.
- *Present Status of Incoherent Pion Photoproduction on the Deuteron*
Bibliotheca Alexandrina, Alexandria, Egypt, March 24, 2005.
- *Polarization Observables of the $\gamma d \rightarrow \pi NN$ Reaction*
Higher Technological Institute, Ramadan Tenth City, Cairo, Egypt, June 7, 2004.
- *Pion Photoproduction off Deuterium in the Δ -Resonance Region*
Kernfysisch Versneller Instituut, Groningen University, The Netherlands July 23, 2002.
- *π -Meson Photoproduction on the Deuteron in the $\Delta(1232)$ Resonance Region*
Sohag University, Sohag, Egypt, October 2001.
- *Die Gerasimov-Drell-Hearn-Summenregel*
Institut für Kernphysik, J. Gutenberg-Universität, Mainz, Germany, July 2001.
- *Incoherent π -Meson Photoproduction on the Deuteron in the $\Delta(1232)$ Resonance Region*
Institut für Kernphysik, J. Gutenberg-Universität, Mainz, Germany, July 2001.
- *Photoproduktion von π -Mesonen am Deuteron*
Institut für Kernphysik, J. Gutenberg-Universität, Mainz, Germany, July 2000.
- *Photopionproduktion am Nukleon im Bereich der Δ -Resonanz*
Institut für Kernphysik, J. Gutenberg-Universität, Mainz, Germany, February 1999.

Published Books:

- [1] E. M. Darwish,
Incoherent Pion Photoproduction on the Deuteron: A Review,
LAP Lambert Academic Publishing, Germany, (2015), 68 pages, 25 Figures, 2 Tables,
ISBN: 978-3-659-68847-8.

- [2] **E. M. Darwish and H. M. Mansour,**
Coherent π -Production off Deuteron Near η -Threshold: A Theoretical Overview,
LAP Lambert Academic Publishing, Germany, (2015), 80 pages, 39 Figures, 1 Table,
ISBN: 978-3-659-81398-6.

List of Publications:

- [1] **E. M. Darwish and H. Arenhoevel,**
NN final state interaction in incoherent photoproduction of pions on the deuteron,
Talk given at the 18th Students' Workshop on "Electromagnetic Interactions", Sept. 2-7, (2001), Bosen (Saar), Germany.
- [2] **E. M. Darwish and H. Arenhoevel,**
 π -Meson photoproduction on the deuteron in the $\Delta(1232)$ -resonance region,
Talk given at the 3rd Int. Conf. on "Nuclear and Particle Physics", Oct. 20-24, (2001), Cairo, Egypt, (Conf. Book of Abstract, p. 6).
- [3] **E. M. Darwish, H. Arenhoevel and M. Schwamb,**
Final-state interaction effects in incoherent photoproduction of π -mesons on the deuteron,
Talk given at the Nuclear Physics Spring Meeting, March 11-15, (2002), Muenster University, Germany, (Book of Abstract, p. 24).
- [4] **E. M. Darwish, H. Arenhoevel and M. Schwamb,**
Contribution of pion production to spin asymmetry and GDH sum rule for the deuteron,
Talk given at the Nuclear Physics Spring Meeting, March 11-15, (2002), Muenster University, Germany, (Book of Abstract, p. 60).
- [5] **H. Arenhoevel, E. M. Darwish, A. Fix and M. Schwamb,**
Present status of electromagnetic reactions on the deuteron above pion threshold,
Proceedings of the 2nd Asia Pacific Int. Conf. on "Few-Body Problems" (APFB02), Aug. 27-30, (2002), Shanghai, China.
- [6] **E. M. Darwish, H. Arenhoevel and M. Schwamb,**
Final-state interaction effects in incoherent pion photoproduction on the deuteron,
Proceedings of the 18th Int. Conf. on "Few-Body Problems in Physics", Sept. 8-14, (2002), Bled, Slovenia.
- [7] **E. M. Darwish,**
Final state interaction effects in pion photoproduction on the deuteron in the $\Delta(1232)$ region,
Talk given at the Int. Conf. on "Mathematics, Nuclear Physics and Applications in the 21st Century", March 8-13, (2003), Cairo, Egypt.
- [8] **E. M. Darwish,**
Contribution of pion photoproduction to spin asymmetry and GDH sum rule for the deuteron,
Talk given at the Int. Conf. on "Mathematics, Nuclear Physics and Applications in the 21st Century", March 8-13, (2003), Cairo, Egypt.
- [9] **E. M. Darwish, H. Arenhoevel and M. Schwamb,**

Final-state interaction in spin asymmetry and GDH sum rule for incoherent pion production on the deuteron,
Proceedings of the 17th Int. Conf. on "Few-Body Problems in Physics" (IUPAP),
June 5-10, (2003), Durham, North Carolina, USA.

- [10] E. M. Darwish, H. Arenhoevel and M. Schwamb,
Influence of final-state interaction on incoherent pion photoproduction on the deuteron in the region of the Δ -resonance,
European Physical Journal A, Vol. 16, p. 111-125, (2003).
- [11] H. Arenhoevel, E. M. Darwish, A. Fix and M. Schwamb,
Present status of electromagnetic reactions on the deuteron above pion threshold,
Modern Physics Letters A, Vol. 18, p. 190-199, (2003).
- [12] E. M. Darwish, H. Arenhoevel and M. Schwamb,
Final state interaction effects in incoherent pion photoproduction on the deuteron,
Few-Body Systems Supplement, Vol. 14, p. 307-309, (2003).
- [13] E. M. Darwish, H. Arenhoevel and M. Schwamb,
Final-state interaction in spin asymmetry and GDH sum rule for incoherent pion production on the deuteron,
European Physical Journal A, Vol. 17, p. 513-517, (2003).
- [14] E. M. Darwish,
Polarization observables in pion photoproduction on the deuteron,
Proceedings of the 4th Conference on "Nuclear and Particle Physics", October. 11-15,
(2003), Fayoum University, Egypt, p. 75-84.
- [15] E. M. Darwish,
Single-spin asymmetries of $d(\gamma,\pi)NN$ in the first resonance region,
Nuclear Physics A, Vol. 735, p. 200-216, (2004).
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