11

Dec. 3 , 2023

CURRICULIUM VITAE

Name: *Gamal Mokhtar Mahmoud*

*D*ate of Birth: September 27, 1956, Sohag, Egypt .

Current Position: Professor Emeritus,  at the Department of Mathematics, Faculty of Science, Assiut University , Assiut, 71516, Egypt.

Permanent Address: Department of Mathematics, Faculty of Science, Assiut University , Assiut,71516, Egypt.

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Web site: <http://www.mahmoud.aun.edu.eg>

Fax# 002-088-2080209.

Citizenship: Egyptian .

Martial Status: Married .

Specialization: Pure *Mathematics (Differential Equations for Dynamical Systems).*

Areas of Research/ Interest :

Nonlinear Dynamical Systems (both real and complex systems), Stochastic systems

(both real and complex systems), Nonlinear Differential Equations and Difference Eqs.

H-index =32 Citations =2662 by 1110 documents (Scopus, 85 Cited Documents- up to 3-12-2023)

<https://www.scopus.com/authid/detail.uri?authorId=35614367400>

<https://orcid.org/0000-0003-2673-8065>

[**https://scholar.google.com/citations?user=nKsfh5cAAAAJ&hl=ar&citsig=AMD79oqxQ-DdJ59-qEjWiTbkpuPHXeWqKw**](https://scholar.google.com/citations?user=nKsfh5cAAAAJ&hl=ar&citsig=AMD79oqxQ-DdJ59-qEjWiTbkpuPHXeWqKw)

Education and Professional Experience:

* 1978 : B. Sc. Degree in Mathematics, Assiut University , Egypt.
* 1981 : M. Sc. Degree in Mathematics, Assiut University, Egypt

**(**Harmonic and sub-harmonic synchronization of a weakly nonlinear conservative physical system**)**.

* 1987 : Ph. D. Degree in Mathematics, Clarkson University, Potsdam, New York, USA(Analytical and numerical approaches to periodic orbits of nonlinear dynamical systems) .
* 1987-90 : Assistant Professor, Department of Mathematics, Faculty of Science , Assiut University , Egypt.
* 1990 : Researcher, Physics Department, Bologna University, Italy.
* 1990-95: Assistant Professor, Department of Mathematics, Faculty of Education, Umm-Al-Qura University (Taif Branch), Saudi Arabia.
* 1995 : Assistant Professor, Department of Mathematics, Faculty of Science, Assiut University, Egypt.
* 1996-2001: Associate Professor, Department of Mathematics, Faculty of Science, Assiut University, Egypt.
* 2001 : Professor, Department of Mathematics, Faculty of Science, Assiut University, Egypt.
* 2001- 2004 : Professor, Department of Mathematics and Computer Science, Faculty of Science, United Arab Emirates University, Al-Ain , P. O. Box 17551, United Arab Emirates.
* 2004- 2012 : Professor, Department of Mathematics, Faculty of Science, Assiut University, Egypt.
* 2012 -2015: Professor, Department of Mathematics, Faculty of Science, Taibah Uninversity, P.O. box 344, Al-Madinah Al-Munawarh, KSA.
* 2015 -2017: Prof. and the Head of the Department of Mathematics, Faculty of Science, Assiut University , Assiut, Egypt.
* 2017- 2018: Manager, Egyptian E- Learning University, Assiut Center , Assiut, Egypt.
* 2018- up to now: Professor, Department of Mathematics, Faculty of Science, Assiut University, Egypt.

Teaching Experience:

* Graduate courses in Dynamical Systems, Nonlinear Ordinary Equations, Integral Equations and Mathematical Methods .Undergraduate Courses in Differential Equations, Partial Differential Equations, Special Functions, Calculus 1, 2, 3, Mathematical Methods and Algebra .

Lectures:

* Two lectures in the graduate seminar series of the Department of Mathematics, Clarkson University, Potsdam, New York, USA, 1986, 1987.
* Lecture at Physics Department, Bologna University, Bologna, Italy, 1990.
* Lecture at the one day Symposium organized by the Egyptian Mathematical Society, Faculty of Science, Assiut University, Egypt , 1997.
* Lecture at the one day conference organized by the Egyptian Mathematical Society, Faculty of Engineering, Cairo University, Cairo, Egypt , 1998.
* Invited Lecture at Physics Department, Oldenburg University, Oldenburg, Germany, 1998.
* Lecture in the seminar series of the Department of Mathematics, Assiut University, Egypt, 2000.
* Invited lecture at Physics Department, Bologna University, Bologna, Italy, 2000.
* Invited lecture at the Third World Congress of Nonlinear Analysts, July 19-26, 2000, Catania, Italy.
* Invited Lecture at Workshop at Tishreen University, November 11-17, 2000, Latakia, Syria.
* Lecture in the seminar series of the Department of Mathematics& Computer Science, United Arab Emirates University, Mach 2002.
* Lecture in the seminar series of Physics Department United Arab Emirates University, October, 2002.
* Lecture in the seminar series of the Department of Mathematics & Computer Science, United Arab Emirates University, Mach 2003.
* Lecture in the seminar series of the Department of Mathematics & Computer Science, United Arab Emirates University, Mach, 10 2004.
* Lecture in the UAE-Math-Day, American University of Sharjah, United Arab Emirates, April 1, 2004.
* Invited Lecture in the seminar series of the Department of Mathematics, Faculty of Science, Sohag, Egypt, April 23, 2005.
* Lecture at the one day Symposium organized by the Egyptian Mathematical Society, Faculty of Science, Alexandera University, Egypt , May 11, 2006.
* Invited lectures at the Department of Applied Mathematics, Northwestern Polytechnical University, Xi’an, China, Aug. 27-Sept. 2, 2006.
* Invited lecture at the one day Symposium organized by the Egyptian Mathematical Society, Faculty of Science, Minia University, Egypt , March 20, 2007.
* Lecture at One Day Conference on Nonlinear Dynamical Systems and their Applications, organized by the Egyptian Mathematical Society and Academy of Scientific Research & Technology, Assiut University, Assiut, Egypt, April 26, 2007.
* Lecture at the Department of Mathematics, Faculty of Sciences, University of Patras, Patras, Greece, Sept. 11, 2007.
* Lecture in the seminar series of the Department of Mathematics, Faculty of Science, Assiut University, Assiut, Egypt, Sept. 9, 2008.
* Two lectures in the Dynamical Systems Seminar of the Department of Mathematics, Kyoto University, Kyoto, Japan , May 1, 2009.
* Invited lecture at the Int. Conference on Mathematics and Information Security, Sohag University, Nov. 13-15, 2009, Sohag, Egypt.
* Invited lecture at the 2nd Int. Conference on Mathematics and Information Science (ICMIS 2011) , Sohag University, Sept. 10-13, 2011, Sohag, Egypt.
* Lecture in the seminar series of the Department of Mathematics, Faculty of Science, King Khalid University, Abha , Saudi Arabia, May 27, 2012.
* Invited lecture at the School of Information and Computation Science, Beifang University of Nationalities , Yinchuan, June 26, 2012.
* Invited two lectures at the Department of Applied Mathematics, Northwestern Polytechnical University, Xi’an, China, July 2, 2012.
* Invited lecture at The 2nd Int. Conference on Dynamical Systems and Modern Applied Mathematics, Beifang University of Nationalities, June 28- July 1, 2012, Yinchuan, China.
* Lecture in the seminar of the Department of Mathematics, Faculty of Science, Taibah University, Al-Madinah Al-Munawarh, Saudi Arabia, Nov.6, 2012.
* Invited two lectures at the Department of Mathematics, Salman bin Abdulaziz University at Al-Aflaj, Saudi Arabia , April 13, 2014.
* Lecture in the seminar of the Department of Mathematics, Faculty of Science, Taibah University, Al-Madinah Al-Munawarh, Saudi Arabia, Dec.23, 2014.
* Invited lecture at the Int. Conference on Mathematics, Statistics & Information Technology (ICMIT 2016), Tanta, Egypt, 20-22 Dec. 2016.
* Invited lecture at The 6th National Stochastic Dynamics Conference, Shandong University ,Weihai Campus, 14-15 Oct. 2017, China.
* Invited lecture at the North Minzu University , Yinchuan, China, Oct. 18, 2017.
* Invited lecture at The 2nd Int. Conference on Mathematics and Its Applications (ICMA18), Misr University for Science & Technology, April 5-7, 2018, Cairo, Egypt.
* Invited talk at 8th Int. Conference on Mathematics and Information Sciences (ICMIS,2019), 6 October University, 8-10 Feb., 2019, Giza, Egypt.
* Invited lecture at the North Minzu University, Yinchuan, China, March 30, 2019.
* Keynote Lecture at The Int. Workshop on Dynamics, Nonlinearity and Stochasticity, Xi’an, China, 1-4 April, 2019.
* Invited four lectures at A Wams School on Introductory topics in Number Theory and Differential Geometry with a Course on Dynamical Systems, King Khalid University, Abha, Saudi Arabia , June 16-22, 2019.
* Keynote Lecture at The 2nd Int. Conference on Applied and Engineering Mathematics, Dept. of Math., HITEC University Taxila, Pakistan, August 27-29, 2019.
* Invited lecture at The 9th Int. Conference on Mathematics and Information Sciences (ICMIS-20), Aswan University, Feb. 6-8, 2020, Aswan, Egypt.
* Invited lecture at The 1th Int.(Online) Conference in Mathematical Sciences and Fractional Calculus, Alexandria University, 16-18 February 2021, Egypt.
* Keynote Speaker, 6th Int. Conference on Life and Engineering Sciences, Nov. 2-5, 2023, Kemer, Antalya, Turky.

Conference Organization:

* + Organizing committee member for Assiut First Int. Conference of Mathematics and Statistics, Feb. 12-14, 1990, Assiut, Egypt.
  + Local Organizing committee member for the Int. Conference on Mathematical Analysis and its Applications, Assiut University, Assiut, Egypt, Jan. 3-6, 2006.
  + Coordinator for One Day Conference on Nonlinear Dynamical Systems and their Applications, Assiut University, April 26, 2007.
  + Int. Program Committee member for The IASTED Int. Conference on Modern Nonlinear Theory (Bifurcation and Chaos), May 30-June1, 2007, Montreal, Quebec, Canada.
  + Int. Program Committee member for Chaos 2008, A Chaotic Modeling and Simulation, International Conference, 3-6 June 2008 Chania, Crete, Greece.
  + Int.Program Committee member for The 2nd IASTED Int. Conference on Modern Nonlinear Theory, November 16-18, 2008, Orlando, Florida, USA.
  + Int. Scientific Committee member for Chaos 2009, The 2nd Chaotic Modeling and Simulation, International Conference, 1-5 June 2009 Chania, Crete, Greece.
  + Reviewer Committee member for the 2nd Int. Conference on the Applications of Digital Information and Web Technologies (ICADIWT 2009), 4-6 August 2009, London, UK.
  + Scientific Committee member for Int. Conf. on Mathematics and Information Securty, 2009, 13-15 Nov. 2009 , Sohag University, Sohag, Egypt.
  + Int. Scientific Committee member for Chaos 2010, The 3rd Chaotic Modeling and Simulation, International Conference, 1-4 June 2010 Chania, Crete, Greece.
  + Conference Chairman for One Day Conference on Mathematics and Their Applications (Numerical Analysis, Differential Equations and Dynamical Systems ) April 14, 2016, Assiut University, Assiut, Egypt.
  + Organizing committee member for The Fifth Int. Conference for Young Scientists in Basic and Applied Sciences Oct. 29-30, 2016, Faculty of Science, Assiut University, Assiut , Egypt.
  + Scientific Committee member for The 2nd Int. Conference on Mathematics & Its Applications, Ain Shams University Guest House , Egypt, May 13-15, 2017.
  + The 2nd Int. Conference on Mathematics and Its Applications (ICMA18), Misr University for Science & Technology, April 5-7, 2018, Cairo, Egypt.
  + The Scientific Committee member for 8th Int. Conference on Mathematics and Information Sciences (ICMIS,2019), 6 October University, 8-10 Feb., 2019, Giza, Egypt.
  + Scientific Committee member for The 9th Int. Conference on Mathematics and Information Sciences (ICMIS-20), Aswan University, Feb. 6-8, 2020, Aswan, Egypt.
  + Scientific Committee member for The Second International Conference on Mathematics of the Euro-Arab Organization for Environmental, Water and Desert Research, Al Hussein Bin Talal State University/ Jordan, in collaboration with Al-Qasim Green University in Iraq, March 26-30, 2020, Antalya, Turkey.
  + Scientific Committee member for The 3rd Int. Conference on Mathematics & Its Applications, Sohag University , Egypt, Nov. 26-27, 2020.
  + Scientific Committee member for The 7th International Arab Conference on Mathematics and Computations (IACMC 2022) , 11-13 May, 2022, at Zarqa University, Jordan.

Conferences Participation:

* 6 th, 7 th, and 8 th, Int. Congress for Statistics, Computer Science, Social and Demographic Research, 1981, 1982, 1983, Cairo, Egypt.
* Nonlinear Vibrations, Stability and Dynamics, Virgina Polytechnic Institute and State University, Blacksburg, Virgina, March 23-25, 1987, USA.
* International Conference for Singular Behavior and Nonlinear Dynamics, August 18-26, 1988, Samos, Greece.
* Assiut First International Conference of Mathematics and Statistics, Feb. 12-14, 1990, Assiut Egypt.
* Nonlinear Problems in Future Particle Accelerators, April 19-25, 1990, Capri, Italy.
* The First International Conference on Basic Science and Advanced Technology, Nov. 9-12, 1996, Assiut, Egypt.
* The One Day Symposium organized by the Egyptian Mathematical Society, On Numerical Analysis and Applications, Feb. 27, 1997, Assiut, Egypt.
* The One Day Symposium organized by the Egyptian Mathematical Society, On Hydrodynamics, Feb. 26, 1998, Assiut, Egypt.
* The One Day Symposium organized by the Egyptian Mathematical Society, On Stochastic Processes and Applications, March 26, 1998, Faculty of Engineering, Cairo University, Cairo, Egypt.
* Fourth International Conference on Difference Equations and Applications, August 27-31, 1998, Poznan, Poland.
* Conference on Mathematics and the 21st Century, January 15-20, 2000, Cairo, Egypt.
* The Third Congress of Nonlinear Analysts, July 19-25, 2000, Catania, Italy.
* The Second International Conference on Basic Science and Advanced Technology, Nov. 5-8, 2000, Assiut, Egypt.
* Workshops on Physics, Tishreen University, Nov. 11-17, 2000, Latakia, Syria.
* Int. Nonlinear Sciences Conference, University of Vienna, Feb. 7-9, 2003, Vienna, Austria.
* The 2003 UAE Mathematics Day, University of Sharjah, May 8, 2003, Sharjah, United Arab Emirates.
* The second Saudi Science Conference, King Abdulaziz University, Jeddah, Kingdom of Saudi Arabia , March 15-17, 2004.
* The UAE-Math-Day, American University of Sharjah, United Arab Emirates, April 1, 2004.
* The Int. Conference on Mathematical Analysis and Its Applications, Assiut, Egypt, Jan. 3-6, 2006.
* The one day Symposium organized by the Egyptian Mathematical Society, on Nonlinear Dynamical Systems, Faculty of Science, Alexandera University, Egypt , May 11, 2006.
* The Second Int. Conference on Dynamics, Vibration and Control, 23-26 August, 2006, Beijing, China.
* The one day Symposium organized by the Egyptian Mathematical Society, Faculty of Science, Minia University, Egypt , March 20, 2007.
* One Day Conference on Nonlinear Dynamical Systems and their Applications, organized by the Egyptian Mathematical Society and Academy of Scientific Research & Technology, Assiut University, April 26, 2007.
* Dynamics Days Europe 2008 Conference, 25-29 August 2008, Delft, The Netherlands.
* The 23rd Conference on Topology and its Applications, organized by the Egyptian Mathematical Society and Academy of Scientific Research & Technology, Math. Dept., Assiut University, April 23, 2009.
* The Int. Conference on Mathematics and Information Security, Sohag University, Nov. 13-15, 2009, Sohag, Egypt.
* The Fourth Saudi Science Conference, Taibah University, Al-Madinah Al-Munawarh, Kingdom of Saudi Arabia, March 21-24, 2010.
* Nonlinear Dynamics and Complexity: Theory, Methods and Applications, Thessalonki, Greece 12-16 July 2010.
* The 3rd Scientific Conference for Young Researchers for Basic Science & Technology, organized by the Faculty of Science, Assiut University, Egypt, 19- 20, April 2011.
* The 2nd Int. Conference on Mathematics and Information Science (ICMIS 2011), Sohag University, Sept. 10-13, 2011, Sohag, Egypt.
* The 2nd Int. Conference on Dynamical Systems and Modern Applied Mathematics, Beifang University of Nationalities, June 28- July 1, 2012, Yinchuan, China.
* Int. Conference for Mathematics and Applications (ICMA15), Faculty of Engineering, MSA University, December 27-29, 2015, Cairo, Egypt.
* One Day Conference on Mathematics and Their Applications (Numerical Analysis, Differential Equations and Dynamical Systems ) April 14, 2016, Assiut University, Assiut, Egypt.
* The Fifth Int. Conference for Young Scientists in Basic and Applied Sciences Oct. 29-30, 2016, Faculty of Science, Assiut University, Assiut , Egypt.
* The Int. Conference on Mathematics, Statistics & Information Technology (ICMIT 2016), Tanta, Egypt, 20-22 Dec. 2016.
* The 6th National Stochastic Dynamics Conference, Shandong University ,Weihai Campus, 14-15 Oct. 2017, China.
* The 2nd Int. Conference on Mathematics and Its Applications (ICMA18), Misr University for Science & Technology, April 5-7, 2018, Giza, Egypt.
* 8th Int. Conference on Mathematics and Information Sciences (ICMIS,2019), 6 October University, 8-10 Feb., 2019, Giza, Egypt.
* Keynote Lecture at The Int. Workshop on Dynamics, Nonlinearity, and Stochasticity , Xi’an , China, 1-4 April, 2019.
* Keynote Lecture at The 2nd Int. Conference on Applied and Engineering Mathematics, Dept. of Math., HITEC University Taxila, Pakistan, August 27-29, 2019.
* One day conference on Mathematical Analysis and its Applications , Math. Dept., Cairo University, Egypt, Dec. 23, 2019.
* 9th Int. Conference on Mathematics and Information Sciences (ICMIS-20), Aswan University, Feb. 6-8, 2020, Aswan, Egypt.
* The 3rd Int. Conference on Mathematics & Its Applications (On line), Sohag University , Egypt, Nov. 26-27, 2020.
* The 1th Int.(Online) Conference in Mathematical Sciences and Fractional Calculus, Alexandria University, 16-18 February 2021, Egypt.
* The 7th Conference for Young Scientists in Basic and Applied Sciences , Faculty of Science, Assiut Univ., Assiut, Egypt, May 10-11, 2022.
* Keynote Speaker, 6th Int. Conference on Life and Engineering Sciences, Nov. 2-5, 2023, Kemer, Antalya, Turky.

Ph.D. and M. Sc. Theses Supervision:

* S. A. Aly, "Analytical and Numerical Studies of Complex Nonlinear Oscillators", M. Sc. Thesis, Assiut University, Egypt, June ,1999.
* A. A. Mohamed, "Analytical and Numerical Studies of Nonlinear Systems", Ph. D. Thesis, Assiut University, Egypt, Nov.,2000.
* S. A. Ahmed, "Stability Analysis of Nonlinear Hill’s Equations", M. Sc. Thesis, Assiut University, Egypt, Nov., 2001.
* Yong Xu, "Response and Chaos Control of Nonlinear Stochastic Complex Dynamical Systems", Ph.D. Thesis, Northwestern Polytechnical University, Xi’an, China, 2004.
* E. A. Mahmoud , "On Some Chaotic Complex Nonlinear Systems", M. Sc. Thesis, Sohag University, Egypt, July, 2007.
* M.A. Al-Kashif, "Basic Properties and Synchronization of Complex Nonlinear Systems" Ph. D. Thesis, Assiut University, Egypt, June 2010.
* M. E. Ahmed, "Analysis of Complex Nonlinear Dynamical Systems ", Ph. D. Thesis, Assiut University, Egypt, July 2011 (The Prize of the best Ph. D. Thesis, 2013, Assiut University).
* E.A. Mahmoud, "Chaotic and Hyperchaotic Nonlinear Systems", Ph. D. Thesis, Sohag University, Egypt, Dec. 27, 2010 (The Prize of the best Ph.D. Thesis, 2012, (Prof. B.H. Ismail ) The Egyptian Mathematical Society ).
* A. A. Arafa , "On passive control of complex nonlinear systems", M. Sc. Thesis, Sohag University, Egypt, July, 2013 (The Prize of the best M.Sc. Thesis, 2014, (Prof. B.H. Ismail ) The Egyptian Mathematical Society).
* A. A. Arafa , " On Complex Nonlinear Systems with Time Delay", Ph.D. Thesis, Sohag University, Egypt, Feb. 2018 (The Prize of the best Ph.D. Thesis, 2019, (Prof. B.H. Ismail ) The Egyptian Mathematical Society ) .
* T. M. A. Abed- Elhamed,. " On synchronization of chaotic n-dimensional fractional-order dynamical systems " M. Sc. Thesis, Assiut University, Egypt, Sept. 2016 (The Prize of the best M.Sc. Thesis, 2018, Assiut University).
* F. H. A. Mohammed, " Analytical and Numerical Studies of Some Epidemiological Models with Diffusion "M. Sc. Thesis, Assiut University, Egypt, Sept. 2016 .
* T. M. A. Abed- Elhamed,. “On chaotic and hyperchaotic dynamical systems and their applications” Ph. D. Thesis, Assiut University, Egypt , Dec., 2019 .
* M. Abdrabo, Ph. D. Thesis, Al-Azhar University, Assiut Branch, Egypt, In Preparation .
* H. K. AbdelAzeem , Ph.D. Thesis , Assiut University, Egypt, Sept. 2023.
* G. Mahmoud Deyab, “M. Sc. Thesis, Sohag University, Egypt, In Preparation .
* Mohamed Otefy Mohamed Ali, “M. Sc. Thesis, Assiut University, Egypt, In Preparation .

Editoral Board Member:

- Journal of the Egyptian Mathematical Society.

* + Int. J. of Applied Mathematical Sciences (IJAMS).
  + Global. J. of Pure and Applied Mathematics (GJPAM).
  + Assiut University Journal of Mathematics and Computer Science.
  + Arab Journal of Mathematics and Mathematical Sciences (AJMMS).
  + International Journal of Modern Nonlinear Theory and Application (IJMNTA).
  + Asian Journal of Mathematics and Applications (AMA).

Referee for Scientific Journals :

* Nonlinear Dynamics, - Int. J. Non-Linear Mechanics (NLM)
* Journal of Sound and Vibration, -Int. Journal of Bifurcation and Chaos (IJBC)
* Computational and Applied Mathematics (CAM), - Journal of Vibration and Control.
* Physica A, - Physica Scripta
* International Journal of Modern Physics C (IJMPC)
* Nonlinear Dynamics, Psychology and Life Sciences .
* Nonlinear Analysis : Theory, Methods and Applications.
* European Journal of Mechanics, -Chaos, Solitons & Fractals.
* Journal of the Franklin Institute.
* Journal Mathematical and Computer Modelling.
* ASME Journal of Dynamic Systems, Measurement, and Control.
* Int. Journal of Control, Automation, and Systems (IJCAS).
* Computers and Mathematics with Application.
* Chinese Physics Letters (CPL).
* Soochow J. of Mathematics, Taiwan, China .

# Referee for Research Proposals

* Research Proposal from City University of Hong Kong, 1999.
* Project Proposals of the Basic Research Program of the Ministry of Science and Environment Protection, Republic of Seriba, 2005.
* Project Proposal (Basic scientific research), Czech Science Foundation, Czech Republic , 2012.
* Research Proposal from different Universities in Egypt and some Arab countries .
* Project Proposal (Basic scientific research), Czech Science Foundation, Czech Republic , 2022, the project proposal No. 23-05261K .

Referee for

- Scientific committee of promotion for Professors and Associate Professors in

Mathematics, Egypt and some Arab countries .

- Ph.D. and M. Sc. Theses, Egypt and Saudi Arabia .

- Promotion Committee for different Arab Countries, e.g., Saudi Arabia, Iraq, Yemen, Jordan and Palestine.

Member For

* Scientific committee of promotion for Professors and Associate Professors in Mathematics, Mathematics Department, United Arab Emirates University, (2001-2004).
* Egyptian Universities Promotion Committee: 2008-2012 (Basic Science, Mathematics).
* Council of Basic Science, Academy of Scientific Research & Technology, 2008-2012 Egypt.
* I have been selected as a member of Egyptian Universities Promotion Committee: 20013-2015 (Basic Science, Mathematics).
* The Egyptian National Committee of Mathematics, Academy of Scientific Research & Technology, Egypt : Nov. 2015-2018.
* Council of Basic Science, Academy of Scientific Research & Technology, June, 2018 up to now, Egypt.
* The Egyptian National Committee of Mathematics, Academy of Scientific Research & Technology, Egypt : Nov. 2018, up to now.
* Egyptian Universities Promotion Committee : (Basic Sciences - Mathematics) 2019-2022

Quality Assurance and Accreditation:

* Member for Committee of Quality Assurance and Accreditation, Faculty of Science, Assiut University, Egypt (2004 - 2008).
* Chairman for Committee of Quality Assurance and Accreditation, Faculty of Science, Taibah University, P.O. box 344, Al-Madinah Al-Munawarh, KSA (2013-2014) .
* Member for Committee of Quality Assurance and Accreditation, Faculty of Science, Assiut University, Egypt (2018 – up to now).

Additional Information:

Awards : Academy of Scientific Research & Technology, Egypt (M. A. Lotfy), 1997, Academy of Scientific Research & Technology, Egypt (The Best Paper in Mathematics) 1999, Assiut University Academic Excellence Award (Basic Sciences 2004/2005) .

The excellent researcher award in mathematics, Taibah University, 2013 , KSA.

The high Impact Factor in mathematics award , 2017, Faculty of Science, Assiut University, Egypt.

The high Impact Factor in mathematics award , 2020, Faculty of Science, Assiut University, Egypt.

The high Impact Factor in mathematics award , 2022, Faculty of Science, Assiut University, Egypt.

My name is within the top 2% of scientists of the world, 2020, PLOS Biology, Stanford University, USA.

Member, American Mathematical Society (1990-2001), Egyptian Mathematical Society

Up to now .

Joint Work:

Joint research with active groups from: Cairo University (Egypt), University of Patras ( Greece), Oldenburg University (Germany), Bologna University (Italy), Extremadura University (Spain), City University of Hong Kong (Hong Kong) and Zhongshan University (P. R. China), Northwestern Polytechnical University (China), Kyoto University, Kyoto, Japan, Universiti Sultan Zainal Abidin, Kuala Terengganu, Malaysia, UniversitasMuhammadiyahTasikmalaya, Indonesia, Universitas Islam Negeri Sunan Gunung Djati Bandung, Indonesia .

Research Proposals:

1- National Natural Science Foundation of China (Grant no. 10502042, 2006-2009).

2- Egypt-Greece Scientific and Technological Cooperation (Project Code

EG/GR1-Math-001, Jan. 2007-March 2008), ASRT.

3- National Natural Science Foundation of China (Grant no. 10972181, 2009-2012).

4- D.O.E. grant DE-FG02-84ER40144, 1987, USA.

5- King Khalid University, Research Groups Program under grant number R.G.P.2 /19 /40, 2019, KSA.

Books:

1- E. Mahmoud and Gamal M. Mahmoud , **On Some Chaotic Complex Nonlinear Systems,** ISBN 978-3-8433-8182-6, LAP Lambert Academic Publishing GmbH & Co. KG, 2010, Germany.

2- E. Mahmoud and Gamal M. Mahmoud , **Chaotic and Hyperchaotic Nonlinear Systems**, ISBN 978-3-8433-8222-9, LAP Lambert Academic Publishing GmbH & Co. KG, 2011, Germany.

3-M. Ahmed and Gamal M. Mahmoud, **Analysis of Complex Nonlinear Dynamical Systems,** ISBN 978-3-8465-0273-0, LAP Lambert Academic Publishing GmbH & Co. KG, 2011, Germany.

**Contribution in Books**

1- G.M. Mahmoud, On chaotic and hyperchaotic complex nonlinear dynamical systems, A Chapter in, Frontiers in the Study of Chaotic Dynamical Systems with Open Problems,

edited by Zeraoulia Elhadj & Julien Clinton Sprott, World Scientific Series on Nonlinear Science Series B, Vol. 16. ISBN:   978-981-4340-69-4  
981-4340-69-3 (2011)

List of Publications:

1. A. El-Nagger and G.M. Mahmoud, Determination of harmonic and sub-harmonic synchronization of a weakly nonlinear conservative physical system, 6th Int. Congress for Stat., Comp. Sci., Soc. and Demog. Res., Cairo, Egypt (March, 1981), PP.241-252.
2. A. El-Nagger and G.M. Mahmoud, Analytical treatment for harmonic and sub-harmonic synchronization of odd order of a weakly nonlinear conservative physical system, 7th Int. Congress for Stat., Comp. Sci., Soc. And Demog. Res., Cairo, Egypt (March, 1982), PP.293-310.
3. A. El-Nagger and G.M. Mahmoud, Analytical studies for even sub- harmonic synchronization of a weakly nonlinear conservative physical system, KMJ, Vol. 22, PP. 203-213, Korea, (1982).
4. A. El-Nagger and G.M. Mahmoud, Synchronization of an oscillatory system, Bulletin of the Faculty of Science , Assiut University,PP.109-125, Assiut, Egypt (1983).
5. T. Bountis and G. M. Mahmoud, Synchronized periodic orbits of Beam-Beam interaction model in one and two space spatial dimensions, Particle and Accelerators, Vol. 22, PP.129-147, USA (1987).
6. G. M. Mahmoud and T. Bountis, Synchronized periodic solutions of a class of periodically driven nonlinear oscillators, J. Applied Mechanics, Vol. 55, PP. 721-728, USA (1988).
7. G. M. Mahmoud and T. Bountis, Analytical and numerical results on a forced Van der Pol oscillators, Int. Conf. For Singular Behavior and Nonlinear Dynamics, Samos, Greece, Aug. 18-26 (1988), Vol.1, PP. 207-221.
8. G.M. Mahmoud, Periodic solutions of two strongly coupled forced Van der Pol oscillators, Proc. of Assiut First Int. Conf. of Math. and Stat., Assiut, Egypt (1990).
9. G. M. Mahmoud, On periodic orbits of nonlinear dynamical systems with many degrees of freedom, Physica A 181, PP. 385-395, (1992).
10. G. M. Mahmoud, On the generalized averaging method of a class of strongly nonlinear oscillators, Physica A 199, PP. 87-95, (1993).
11. G.M. Mahmoud, Analytical approach for the solutions of nonlinear couples second order systems, Bulletin of the Faculty of Science , Assiut University, 23(1-c)PP.1-13, Assiut, Egypt (1994).
12. G. M. Mahmoud, Beam-Beam interaction model with a small stochastic perturbation, Physica A 216, PP. 445-451, (1995).
13. G. M. Mahmoud, T. Bountis and G. Turchetti, Synchronization in parametrically driven Hamiltonian systems, Il Nuovo Cimento, Vol. 110B, N. 11, PP.1311-1322 (1995).
14. J.D. Bejarano, J.G.-Margallo and G.M. Mahmoud, Analytical and numerical studies of periodic solutions outside potential wells, Anales De Fisica 92, No. 3, PP. 121-125, Spain (1996).
15. G. M. Mahmoud, Stability regions for coupled Hill’s equations, Physica A 242, PP. 139-149 (1997).
16. G. M. Mahmoud, Periodic solutions of strongly non-linear Mathieu oscillators, Int. J. Non-Linear Mech., Vol. 32, No. 6, PP. 1177-1185 (1997).
17. G. M. Mahmoud, Approximate solutions of a class of complex nonlinear dynamical systems, Physica A 253, PP. 211-222 (1998).
18. G. M. Mahmoud, A. Rauh and A. A. Mohamed, On modulated complex nonlinear dynamical systems, Il Nuovo Cimento, Vol. 114B,No.1, PP.31-48 (1999).
19. M. El-Tawel and G. M. Mahmoud, The solvability of parametrically forced oscillators using WHEP technique, Mechanics and Mechanical Engineering, Vol. 3, No.2, PP. 181-188 (1999).
20. G. M. Mahmoud and S. A. Aly, On periodic solutions of parametrically excited complex nonlinear dynamical systems, Physica A 278, PP. 390-404 (2000).
21. G. M. Mahmoud and S. A. Aly, Periodic attractors of complex damped nonlinear systems, Int. J. Non-Linear Mech., Vol. 35 6, PP. 309-323 (2000).
22. G. M. Mahmoud, T. Bountis and S. A. Ahmed, Stability analysis for system of nonlinear Hill’s equations, Physica A 286, PP. 133-146 (2000).
23. G. M. Mahmoud, A theorem for n-dimensional strongly nonlinear dynamical systems,Int. Non-Linear Mech., Vol. 36, PP. 1013-1018 (2001).
24. G. M. Mahmoud, A. A. Mohamed, and S. A. Aly, Strange attractors and chaos control in periodically forced complex Duffing’s oscillators, Physica A 292, PP. 193-206 (2001).
25. G. M. Mahmoud, H. A. Abdusalam and A. A. M. Farghly, Chaotic behavior and chaos control for a class of complex partial differential equations, Int. J. Mod. Phys. C, Vol. 12, No. 6, PP. 889-899 (2001), doi: 10.1142/S0129183101002073.
26. G. M. Mahmoud, A. Rauh and A. A. Mohamed, Applying chaos control to a modulated complex nonlinear systems, Il Nuovo Cimento, Vol. 116B, No. 10, PP. 113-1126 (2001).
27. G. M. Mahmoud, T. Bountis and S. A. Ahmed, On the stability analysis of strongly nonlinear coupled Hill’s equations, Int. J. of Differential Equations and Applications, Vol.4, No.4, PP. 437-465 (2002).
28. G. M. Mahmoud and G. Turchetti, Approximate first order solutions of nonlinear dynamical mappings, Physica A 312, PP. 369-380(2002).
29. K. W. Chung, C. L. Chan, Z. Xu and G. M. Mahmoud, A perturbation-incremental method for strongly nonlinear autonomous oscillators with many degrees of freedom, Nonlinear Dynamics, 28(3), PP. 243-259 (2002).
30. G. M. Mahmoud and A. A. M. Farghaly, Stabilization of unstable periodic attractors of complex damped non-linear dynamical systems, Chaos, Solitons &Fractals 17, PP.105-112 (2003).
31. G. M. Mahmoud , Chaotic behavior of nonlinear oscillators, Int. Nonlinear Sciences Conference, University of Vienna, Feb. 7-9, 2003, Vienna, Austria.
32. Yong Xu, Wei Xu and G. M. Mahmoud, Responses of coupled Duffing’s equations with random excitation, Int. J. of Differential Equations and Applications, Vol. 7, No. 3PP.415-442 (2003).
33. G. M. Mahmoud, and T. Bountis, The dynamics of systems of complex nonlinear oscillators: A Review, Int. J. of Bifurcation and Chaos, Vol. 14, No. 11,PP. 3821-3846,( 2004). doi: 10.1142/S0218127404011624.
34. Yong Xu, Wei Xu and G. M. Mahmoud, On a complex beam-beam interaction model with random forcing, Physica A 336, PP.347-360 (2004).
35. G. M. Mahmoud and A. A. M. Farghaly, Chaos control of chaotic limit cycles of real and complex Van der Pol oscillators, Chaos, Solitons &Fractals, 21, PP. 915-924 (2004).
36. G. M. Mahmoud and A. A. M. Farghaly, On Stabilization of coupled complex nonlinear Schrdinger equations, Int. J. Modern Physics C15, 6 ,PP.845-866 (2004) and The second Saudi Science Conference, King Abdulaziz University, Jeddah, Kingdom of Saudi Arabia , March 15-17, 2004.
37. Yong Xu, Wei Xu and G. M. Mahmoud, On a stochastic beam-beam interaction model under narrow-band excitation, Int. Symposium on Nonlinear Theory and its Applications (NOLTA2004) Fukuoka, Japan, Nov. 29-Dec.3, PP111-114 (2004).
38. Yong Xu, G. M. Mahmoud and Wei Xu, Suppressing chaos of a complex Duffing system using a random phase, Chaos, Solitons &Fractals Vol.23, PP.265-273 (2005).
39. Yong Xu, Wei Xu, G. M. Mahmoud and Y. Lei, Beam-beam interaction models under narrow-band random excitation, Physica A 346 (3-4), PP.372-386 (2005).
40. Yong Xu, Wei Xu and G. M. Mahmoud, Generating chaotic limit cycles for a complex Duffing-Van der Pol system with random phase , Int. J. Modern Physics C 16, issue 9, PP.1437-1447, 2005 .
41. G. M. Mahmoud. On chaotic behavior and chaos of classes of complex nonlinear dynamical systems : A Review, has been accepted for presentation in The Int. Conference on Mathematical Analysis and its Applications, Assiut University, Assiut, Egypt, Jan. 3-6, 2006.
42. G.M.Mahmoud, S.A. Aly, and A.A. Farghaly, On chaos synchronization of a complex two coupled dynamos system, The Second Int. Conference on Dynamics, Vibration and Control, 23-26 August, 2006, Beijing, China, and Chaos, Solitons &Fractals Vol.33,No. 1, PP.178-187 (2007).
43. G.M.Mahmoud, M. A. Al-Kashif, and S.A. Aly, Basic properties and chaotic synchronization of complex Lorenz system, Int. J. Mod. Phys. C, Vol. 18,No.2,PP. 253-265, (2007).
44. Yong Xu, Wei Xu and G. M. Mahmoud, On a Stochastic complex Lorenz system, The Second Int. Conference on Dynamics, Vibration and Control, 23-26 August, 2006, Beijing, China.
45. G. M. Mahmoud, T. Bountis and E. E. Mahmoud, Active control and global synchronization for complex Chen and Lü systems, Int. J.of Bifurcation and Chaos, Vol.17, No.12,PP 4295-4308 (2007).
46. G. M. Mahmoud, E.E. Mahmoud and M. E. Ahmed, A hyperchaotic complex Chen system and its dynamics, Int. J. Appl. Math. Stat. Vol.12,No. D07, PP.90-100, 2007.
47. G.M.Mahmoud, S.A. Aly, and M. A. Al-Kashif, Dynamical properties and chaos synchronization of a new chaotic complex nonlinear system, Nonlinear Dynamics 51, (1-2) PP.171-181, 2008, doi : 10.1088/1751-8113/41/5/055104.
48. Qun He,Yong Xu, G.M.Mahmoud and Wei Xu, The control of stochastic complex damped nonlinear systems, Int. J. Mod. Phys. C, Vol. 18, No.8, PP. 1-13, (2007) DOI:10.1142/S0129183107011303.
49. Yong Xu, Wei Xu and G. M. Mahmoud, On a Complex Duffing systems with random excitation , 2005 International Symposium on Nolinear Dynamics, December 20-21, 2005, Shanghai, China and Chaos, Solitons &Fractals, 35, PP.126-132(2008) .
50. G. M. Mahmoud, M. A. Al-Kashif, and A. A. Farghaly, Chaotic and hyperchaotic attractors of a complex nonlinear system, J. of Physics A :Mathematical and Theoretical, 41, No. 5, Feb. 2008, 055104 (12pp), doi : 10.1088/1751-8113/41/5/055104.
51. G. M. Mahmoud, M. E. Ahmed and E. E. Mahmoud, Analysis of hyperchaotic complex Lorenz systems, Int. J. Modern Physics C Vol.19, No.10, PP. 1477-1494 (2008), doi: 10.1142/S0129183108013151.
52. Yong Xu and G. M. Mahmoud, Stabilization of a Nonlinear Stochastic Complex Damped System using Random Force, The Conference for Mathematics, Mechanics and Physics, High Technology Research (MMPH-12), EMeishan, SiChuan, China , August 1-3, 2008.
53. G.M. Mahmoud, T. Bountis, M. A. Al-Kashif and S.A. Aly, Dynamical properties and synchronization of complex nonlinear equations for detuned lasers, Dynamical Systems :An International Journal, 24(01), March 2009, PP.63-79, DOI:10.1080/14689360802438298.
54. G. M. Mahmoud, E. E.Mahmoud, A. A. Farghaly and S. A. Aly, Chaotic synchronization of two complex nonlinear oscillators, Chaos, Solitons & Fractals 42, PP 2858-2864( 2009).
55. G. M. Mahmoud, E.E. Mahmoud and M. E. Ahmed, On the hyperchaotic complex Lü system, Nonlinear Dynamics (2009) 58: 725-738, DOI: 10.1007/s11071-009-9513-0.
56. G.M.Mahmoud, T.Bountis, G.M.AbdEl-Latif, and E. E.Mahmoud, Chaos synchronization of two different chaotic complex Chen and Lü systems, Nonlinear Dynamics Vol.55, No.1-2, PP.43-53 (2009), DOI: 10.1007/s11071-008-9343-5.
57. G. M. Mahmoud and E.E. Mahmoud, Phase and anti-phase synchronization of two identical hyperchaotic complex nonlinear systems, Nonlinear Dynamics (2010) 61, 141-152, DOI: 10.1007/s11071-009-9637-2.
58. G.M. Mahmoud, M. E. Ahmed and Nabil Sabor, On autonomous and non-autonomous modified hyperchaotic complex Lü systems, The Fourth Saudi Science Conference, Taibah University, Al-Madinah Al-Munawarah, Kingdom of Saudi Arabia , March 21-24, 2010, and Int. J.of Bifurcation and Chaos Vol.21, No.7, PP. 1913–1926 (2011) DOI No: [10.1142/S0218127411029525](http://dx.doi.org/10.1142/S0218127411029525) .
59. G. M. Mahmoud and E. E. Mahmoud, Synchronization and control of hyperchaotic complex Lorenz system, has been presented at Dynamics Days Europe 2008 Conference, 25-29 August 2008, Delft, The Netherlands, and Mathematics and Computers in Simulation 80(12, August), 2010, 2286-2296 DOI : 10.1016/j.matcom.2010.03.012.
60. G. M. Mahmoud and E.E. Mahmoud, Modified projective lag synchronization of two non-identical hyperchaotic complex nonlinear systems, Nonlinear Dynamics and Complexity: Theory, Methods and Applications, Thessalonki, Greece 12-16 July 2010, and Int. J.of Bifurcation and Chaos [Volume: 21,](http://ejournals.wspc.com.sg/ijbc/mkt/archive.shtml?2011&21) [Issue: 8](http://ejournals.wspc.com.sg/ijbc/21/2108/S02181274112108.html)(2011) pp. 2369-2379     DOI: [10.1142/S0218127411029859](http://dx.doi.org/10.1142/S0218127411029859) .
61. G. M. Mahmoud and E.E. Mahmoud, Complete synchronization of chaotic complex nonlinear systems with uncertain parameters, Nonlinear Dynamics (2010) 62, 875-882, DOI: 10.1007/s11071-010-9970-y .
62. G.M. Mahmoud and M. E. Ahmed, Modified projective synchronization and control of complex Chen and Lü systems, Journal of Vibration and Control , Volume 17 Issue 8 July 2011, PP. 1184 - 1194, DOI 10.1177/1077546310378871.
63. G.M. Mahmoud and M. E. Ahmed, A hyperchaotic complex system generating two-, three-, and  
    four-scroll attractors" Journal of Vibration and Control ,Vol. 18, No 6, May 2012, PP841-849, DOI: 10.1177/1077546311405370.
64. G.M. Mahmoud and M. E. Ahmed, Chaotic and hyperchaotic complex jerk equations, the 2nd Int. Conference on Mathematics and Information Science (ICMIS 2011) , Sohag University, Sept. 10-13, 2011, Sohag, Egypt, and the International Journal of Modern Nonlinear Theory and Application (IJMNTA) , 2012, 1, 6-13, doi: 10.4236/ijmnta.2012.11002.
65. G. M. Mahmoud and E.E. Mahmoud, Lag synchronization of hyperchaotic complex nonlinear systems, Nonlinear Dynamics: Volume 67, Issue 2 (2012), Page 1613-1622. DOI: 10.1007/s11071-011-0091-6.
66. G. M. Mahmoud and E.E. Mahmoud, Adaptive synchronization of two different n  -dimensional chaotic complex nonlinear systems with fully uncertain parameters, American Academic & Scholarly Research Journal 4(1), 79-94 (2012).
67. G.M. Mahmoud, E.E. Mahmoud and A.A. Arafa, Controlling hyperchaotic complex nonlinear systems with unknown parameters based on adaptive passive method, Chin. Phys. B Vol. 22, No. 6 (2013) 060508.
68. G.M. Mahmoud, E.E. Mahmoud and A. A. Arafa, On projective synchronization of hyperchaotic complex nonlinear systems based on passive theory for secure communications " Physica Scripta , 87, 055002, 2013, [doi:10.1088/0031-8949/87/05/055002](http://dx.doi.org/10.1088/0031-8949/87/05/055002).
69. G. M. Mahmoud and E.E. Mahmoud, Complex modified projective synchronization of two chaotic complex nonlinear systems, Nonlinear Dynamics, Vol.73 (4), pp. 2231-2240, (Sept.) 2013.
70. G.M. Mahmoud, E.E. Mahmoud and A. A. Arafa, Passive control of n-dimensional chaotic complex nonlinear systems " Journal of Vibration and Control ,Vol.19,No.7, PP 1061–1071, 2013 (May).DOI: 10.1177/1077546312439430.
71. G. M. Mahmoud and E.E. Mahmoud, Synchronization of two different n  -dimensional chaotic complex nonlinear systems with fully unknown parameters, Journal of Advanced Research in Dynamical and Control Systems, Vol. 5 (2013) 47-58.
72. Shaban Aly, Ali Al-Qahtani, Houari B. Khenous, G. M. Mahmoud, Impulsive control and synchronization of complex Lorenz systems, Abstract and Applied Analysis, Vol. 2014, Article ID 932327, 9 pages, 2014.
73. G.M. Mahmoud, E.E. Mahmoud and A. A. Arafa, On modified time delay hyperchaotic complex Lü system, Nonlinear Dyn (2015) 80 : 855-869, DOI 10.1007/s11071-015-1912-9.
74. G. M. Mahmoud, T. M. Abed – Elhameed, and M. E. Ahmed "Generalization of combination-combination synchronization of chaotic n-dimensional fractional-order dynamical systems, Nonlinear Dynamics, 83:1885–1893 (2016), DOI 10.1007/s11071-015-2453-y .
75. G.M. Mahmoud, E.E. Mahmoud and A. A. Arafa, Projective synchronization for coupled partially linear complex-variable systems with known parameters, Mathematical Methods in the Applied Sciences, Vol.40 (No.4) 1214-1222, 2017 ( March 15), DOI: 10.1002/mma.4045 .
76. G.M. Mahmoud and M. E. Ahmed, Analysis of chaotic and hyperchaotic conservative complex nonlinear systems" has been accepted as an oral presentation in the 3rd Scientific Conference for Young Researchers for Basic Science & Technology, organized by the Faculty of Science, Assiut University, Egypt, 19- 20, April 2011,and

Miskolc Mathematical Notes, DOI: 10.18514/MMN.2017.1407,Vol. 18 (2017), No. 1, pp. 315–326.

1. G. M. Mahmoud, M. E. Ahmed and T. M. Abed – Elhameed, "Active control technique of fractional-order chaotic complex systems", Eur. Phys. J. Plus (2016) 131: 200 ,DOI: 10.1140/epjp/i2016-16200-x.
2. G. M. Mahmoud, M. E. Ahmed and T. M. Abed – Elhameed, On fractional-order hyperchaotic complex systems and their generalized function projective combination synchronization, Optik, Int. J. for Light and Electron Optics, 130 (2017) 398–406, DOI: 10.1016/j.ijleo.2016.10.095.
3. G.M. Mahmoud, A. A. Farghaly and A. Shoreh, A technique for studying a class of fractional-order nonlinear dynamical systems , Int. J. Bifurcation Chaos 27, 1750144 (2017) [11pages], doi.org/10.1142/S0218127417501449.
4. G.M. Mahmoud, A. A. Arafa, T. M. Abed – Elhameed, and E.E. Mahmoud, Chaos control of integer and fractional orders of chaotic Burke-Shaw system using time delayed feedback control" Chaos, Solitons and Fractals 104 (2017) 680–692,doi.org/10.1016/j.chaos.2017.09.023 0960-0779/© 2017.
5. G.M. Mahmoud , A. A. Arafa, and E.E. Mahmoud " Bifurcations and Chaos of time delay Lorenz system with dimension 2n+1" Eur. Phys. J. Plus (2017) 132: 461 DOI 10.1140/epjp/i2017-11739-6.
6. G.M. Mahmoud, E.E. Mahmoud and A.A.Arafa,  "Synchronization of time delay systems with non-diagonal complex scaling functions" Chaos, Solitons and Fractals 111 (2018) 86–95 (June, 2018), doi.org/10.1016/j.chaos.2018.04.001 0960-0779/© 2018.
7. G. M. Mahmoud, T. M. Abed – Elhameed, and A. A. Farghaly " Double compound combination synchronization among eight n-dimensional chaotic systems " Chin. Phys. B, 2018, 27 (**8**): 080502 **doi:** 10.1088/1674-1056/27/8/080502.
8. G.M. Mahmoud , A. A. Arafa, and E.E. Mahmoud " On phase and anti-phase combination synchronization of time delay nonlinear systems " *J. Comput. Nonlinear Dynam* 13(11), 111001 (Nov., 2018) (8 pages)Paper No: CND-18-1149 ; doi: 10.1115/1.4041033.
9. G. M. Mahmoud, Ahmed A. Farghaly, Tarek M. Abed-Elhameed, and Mohamed M. Darwish " Adaptive dual synchronization of chaotic (hyperchaotic) complex systems with uncertain parameters and its application in image encryption ", Acta Physica Polonica B , Vol. 49, No. 11, Nov. 2018, DOI:10.5506/APhysPolB.49.1923-1939.
10. Aceng Sambas, Mustafa Mamat, Ayman A. Arafa, G. M. Mahmoud, Mohamad A. Mohamed, W.S. MadaSanjaya, A New Chaotic System with Line of Equilibria : Dynamics, Passive Control and Circuit Design, International Journal of Electrical and Computer Engineering (IJECE), 2019, Vol. 9, No. 4, August 2019, pp. 2365~2376 ISSN: 2088-8708, DOI: 10.11591/ijece.v9i4.pp2365-2376.

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| --- |
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1. G. M. Mahmoud, Tarek Aboelenen, Tarek M. Abed-Elhameed, Ahmed A. Farghaly, "Generalized Wright stability for distributed fractional-order nonlinear dynamical systems and their synchronization", Nonlinear Dynamics, 97(1), 413-429, DOI: 10.1007/s11071-019-04979-7, July, 2019.
2. G. M. Mahmoud, Ahmed A. Farghaly, Tarek M. Abed-Elhameed, Shaban A. Aly, Ayman A. Arafa, Dynamics of distributed-order hyperchaotic complex van der Pol oscillators and their synchronization and control, Eur. Phys. J. Plus (Jan., 2020)135:32, DOI: 10.1140/epjp/s13360-019-00006-1 .
3. Ayman A. Arafa, Yong Xu, and Gamal M. Mahmoud, Chaos Suppression via Integrative Time Delay Control, Journal of Bifurcation and Chaos, Vol. 30, No. 14 (2020) 2050208 (18 pages), DOI:10.1142/S0218127420502089,
4. G. M. Mahmoud, Tarek Aboelenen, Tarek M. Abed-Elhameed, Ahmed A. Farghaly, "On boundedness and projective synchronization of distributed order neural networks" ,Applied Mathematics and Computation 404 , 126198 (Sept. 2021), doi.org/10.1016/j.amc.2021.126198.
5. G.M.Mahmoud, , Tarek M. Abed-Elhameed and Hesham Khalf, On fractional and distributed order hyperchaotic systems with line and parabola of equilibrium points and their synchronization, [Physica Scripta](https://iopscience.iop.org/journal/1402-4896), [Volume 96](https://iopscience.iop.org/volume/1402-4896/96), [Number 11](https://iopscience.iop.org/issue/1402-4896/96/11).( 2021 Phys. Scr. 96 115201) [doi.org/10.1088/1402-4896/ac0f3c](https://doi.org/10.1088/1402-4896/ac0f3c), 2021 (Nov, 2021).  IOPscience.
6. Ayman A. Arafa, Soliman A. A. Hamdallah, Sanyi Tang, Yong Xu, and G.M. Mahmoud, Dynamics Analysis of a Filippov Pest Control Model with Time Delay,

Communications in Nonlinear Sciences and Numerical Simulations 101 ( October 2021) 105865, DOI [10.1016/j.cnsns.2021.105865](https://doi.org/10.1016/j.cnsns.2021.105865) .

93.**G. M. Mahmoud**, Tarek M. Abed-Elhameed, Motaz M. Elbadry, **A class of different**

**fractional-order chaotic (hyperchaotic) complex Duffing-van der Pol oscillators and their**

**circuits implementations, J. Comput. Nonlinear Dynam.,** December 2021, 16(12):

121005. doi: <https://doi.org/10.1115/1.4052569>.

94. **G.M. Mahmoud, Tarek M. Abed-Elhameed and Hesham Khalf,** Synchronization of hyperchaotic dynamical systems with different dimensions, Phys. Scr. 96 (12) (2021) (Dec. 2021)125244 <https://doi.org/10.1088/1402-4896/ac3152>.

95. G.M. Mahmoud, Hesham Khalf**,** Mohamed M. Darwish, and **Tarek M. Abed-Elhameed “**Different kinds of modulus-modulus synchronization for chaotic complex systems and their applications**”, Acta Phys. Pol. B**[**53**](https://www.actaphys.uj.edu.pl/R/53)**, 6-A2 (2022) • published online: 2022-06-06**

# 96. G.M. Mahmoud, Asma Althemairi [,](https://sciprofiles.com/profile/2212276) Tarek M. Abed-Elhameed, Ahmed A. Farghaly, Compound-Combination Synchronization for Fractional Hyperchaotic Models with Different Orders, Symmetry 2023, 15(2), 279; <https://doi.org/10.3390/sym15020279>.

# 97. Tarek M. Abed-Elhameed ,G.M. Mahmoud, and M. E. Ahmed , On real and complex dynamical models with hidden attractors and their synchronization", Phys. Scr. 98 (2023) 045223 https://doi.org/10.1088/1402-4896/acc49, (Feb. 21).

**98.** G.M. Mahmoud, Hesham Khalf, Mohamed M. Darwish, and Tarek M. Abed-Elhameed" On the fractional-order simplified Lorenz models: Dynamics, synchronization, and medical image encryption" Math. Meth. Appl. Sci. 2023;1–20, DOI: 10.1002/mma.9422.

**99.** Mahmoud A. Abd Raboa, Gamal M. Mahmoud, Shaban Aly and Tarek M. Abed-Elhameed **,** ON THE DYNAMICS OF DELAYED AND NON-DELAYED FRACTIONAL-ORDER AND DISTRIBUTED-ORDER CONSUMER MODELS**,** Acta Physica Polonica B, vol. 54, No.7, A2 (2023) , DOI:10.5506/APhysPolB.54.7-A2.

**100**. G.M. Mahmoud, Hesham Khalf**,** Mohamed M. Darwish, andTarek M. Abed-Elhameed, Synchronization and desynchronization of chaotic models with integer, fractional and distributed orders and a color image encryption application, **Phys. Scr. 98** (2023) 095211 <https://doi.org/10.1088/1402-4896/aceb3c>.

**101-** Tarek M. Abed-Elhameed ,G.M. Mahmoud, Motaz M. Elbadry, and M. E. Ahmed , Nonlinear distributed-order models: Adaptive synchronization, image encryption and circuit implementation , Chaos, Solitons & Fractals, Vol. 175, Part 1, October 2023, 114039, <https://doi.org/10.1016/j.chaos.2023.114039>

102. Tarek M. Abed-Elhameed ,G.M. Mahmoud, and Atef M. AboElkher , On fractional and distributed orders nonlinear chaotic jerk models and their control, has been accepted for publication in Acta Physica Polonica B , 2023.