

\* \* *PERSONAL INFORMATION* \* \*

- \* **Name:** Sahar Mubarak Z. Alqaraleh.
- \* **Academic rank:** Professor.
- \* **Nationality :** Jordanian.
- \* **Address :**  
Department of Mathematics,  
Faculty of Science,  
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Maan, Jordan.
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\* \* *EDUCATION* \* \*

**1- PhD degree:**

- Main Subject: Functional Analysis,
- University and Country: Michigan Technological University/ USA.
- Graduation Date: Aug/2006
- Average: Excellent
- Dissertation Title: Variational principles for linear and nonlinear mixtures: New derivations and application to bilinear materials and yield behavior.

**2- Master degree:**

- Main Subject: Mathematics,
- University and Country: The University of Jordan/ Jordan.
- Graduation Date: Jan/1994
- Average: Excellent

### 3- Bachelor degree:

- Main Subject: Mathematics,
- University and Country: Mutah University/ Jordan.
- Graduation Date: Jan/1991
- Average: Excellent

#### \* \* COMPUTER SKILLS \* \*

1. Mathematica.(Expert.)
2. Latex.(Expert.)

#### \* \* LANGUAGES \* \*

1. Arabic: Native.
2. English: Excellent.

#### \* \* RESEARCH INTERESTS \* \*

- 1 - Applied mathematics.
- 2 - Discrete Mathematics
- 3 - Abstract Algebra.
- 4 - Group and Ring Theory
- 5 - Number theory
- 6 - Applications of linear and nonlinear systems of ordinary and partial differential equations.
- 7 - Differential Geometry.
- 8 - Fuzzy Spaces.
- 9 - General Relativity.
- 10 - Mathematical physics.

#### \* \* PROFESSIONAL EXPERIENCES \* \*

1. Mutah University/ Jordan 1993 -2001.
- Position Held: Lecturer.
  - Discipline: Mathematics.

2. Michigan Technological University/ USA Jan/2002- July/2006.  
 - Position Held: Teaching Assistance.  
 - Discipline: Teach students. elementary courses in Mathematics, Mathematica software, and laboratory calculus sessions.
3. Al-Hussein Bin Talal University/ Jordan. /Aug/2006- Till Now  
 - Position Held: - Assistance Professor Aug/2006- July/2013 - Associate professor. July/2013-now  
 - Discipline: Teach students different courses in mathematics through discussion, practical and group exercises, Assess students through solving problems, evaluating and discussing exams and project requirements, Counsel and advise students on scheduling their classes and degree requirements.
4. Al Majmaah University/ Kingdom of Saudi Arabia: Sep/ 2014 - Sep/ 2015  
 - Position Held: Sabbatical leave, associate professor.

\* \* **CONFERENCES** \* \*

1. Dalhousie University Halifax Conference, Nova Scotia, Canada, The strength of rigid/plastic composites: a comparison of piecewise-linear and power-law approximations, July/17/2006
2. Petra International Conference on Mathematics, Oct. 23-25 Oct., 2007. Al-Hussein Bin Talal University/ Jordan.
3. Arabic Council for Training Arab Students. Al-Hussein Bin Talal University/ Jordan. August 9/2007.
4. The International Conference on Fractional Differentiation and its Applications, ICFDA, 16-18 July 2018, Amman, The Hashemite Kingdom of Jordan.
5. The Second International Conference on Mathematics Ewdr, Organized by: The Euro-Arab Organization for Environment Water, and Desert Reseaches, Antalya-Turkey 26-30/03/2020.

A) **SUPERVISION:**

- 1 - Master degree in Mathematics for Thair Mohammed Al-Meqdad. Fractional Integrals Operators and their Applications in Mathematics and Other Sciences, Al-Hussein Bin Talal University/ Jordan, April/2019
- 2 - Master degree in Mathematics for Ahmad Jaradat. Exact solutions of the KDV-equation, Al-Hussein Bin Talal University/ Jordan, 2021
- 3 - Master degree in Mathematics for Amaal Al-Eiseh. Exact solutions of the three wave interaction equations, Al-Hussein Bin Talal University/ Jordan, 2021
- 4 - Master degree in Mathematics for Razan Rafaiah. Approximating the solution of some initial value problems by Runge-Kuttah methods, Al-Hussein Bin Talal University/ Jordan, 2021
- 5 - Master degree in Mathematics for Dania Rafaiah. A comparison study between some numerical methods for approximating the solutions of linear systems of Equations, Al-Hussein Bin Talal University/ Jordan, 2022
- 6 - Master degree in Mathematics for Shareefah Ajaleen. Some polynomial interpolation methods of discrete and continuous data, Al-Hussein Bin Talal University/ Jordan, 2022

7 - Master degree in Mathematics for Ahmad Mazaydeh. Numerical solutions of systems of second order ordinary differential equations, Al-Hussein Bin Talal University/ Jordan, 2023

8 - Master degree in Mathematics for Dana Damania. Approximating solutions of systems of initial linear ordinary differential equations, Al-Hussein Bin Talal University/ Jordan, 2023

B) **DISCUSSION COMMITTEE:**

1. Member, Master degree in Mathematics for Mohammad Ali- Neimat. Reproducing Kernel Hilbert Space Method for Certain Class of Boundary Value Problem: Theorems Application. Al-Hussein Bin Talal University/ Jordan, December/2018.

2- Member, Master degree in Mathematics for Ahmad Awad Al-Habahbeh. Applications of Reproducing Kernel Method for Solving System of Boundary Value Problems, Al-Hussein Bin Talal University/ Jordan, April/2019

3- Member, Master degree in Mathematics for Rania Mohammed Al-Areed. Finiteness of the Order of a Trans-normal Manifold, Mutah University/Jordan, June/ 2020.

4- Member, Master degree in Mathematics for Mo'men Khalid Bany Amer, Complex Bipolar Multi-Fuzzy Sets Al-Hussein Bin Talal University/ Jordan, Jan./2022

5- Member, Master degree in Mathematics for Haneen Abdul-Lateef Saleh. Numerical Solutions of convection Boundary-Layer FLOW in Casson Nano Fluid, Al-Hussein Bin Talal University/ Jordan, April/2021.

**\* \* TAUGHT COURSES \* \***

**( \* ) Undergraduate Courses:**

- Calculus.
- Linear Algebra.
- Abstract Algebra.
- Discrete Mathematics.
- Number theory.
- Ordinary Differential Equations.
- Partial Differential Equations.
- Principles of Pure and Applied Mathematics.
- Probability and Mathematical Statistics.
- Set theory.(Principles of Mathematics, Mathematical logic)
- Euclidean and Non - Euclidean Geometry.
- Mathematical Methods (Special Functions ).
- Special Topics in Applied Mathematics (Fluid and Quantum Mechanics).
- Real Analysis.

- Complex Analysis.
- Functional Analysis

( \*\* ) Graduate Courses:

- General Topology.
- Functional Analysis

\* \* AWARDS \* \*

1. Scholarship from Al-Hussein Bin Talal University/Jordan to study PhD in Applied Mathematics at Michigan Technological University, USA 2002-2006.
2. Scholarship from Mutah University/Jordan to study Master degree in Mathematics at The University of Jordan/ 1991-1993.

**1 - Sahar M. Alqaraleh**, and Adeeb G. Talafha. New Family of Exact Soliton Solutions for the Nonlinear Three-Wave-Interaction Equations, Journal of Mathematics and Statistics Vol. 7(1), pp. 45-50, (2011).

**2 - Adeeb G. Talafha and Sahar M. Alqaraleh**. Obtaining Analytic Soliton Solutions for the Three-Wave-Interaction Equations by the Extended Tanh Method. Advances in Theoretical and Applied Mathematics. Vol. 7 (2), pp.109-123, (2012).

**3 - Sahar M. Alqaraleh**, Feris M. Al Faqih and Adeeb G. Talafha. Constructing a train of soliton solutions for the three-wave-interaction equations. Applied Mathematical Sciences, Vol. 7(63), pp. 3097-3109, (2013).

**4 - Sahar M. Alqaraleh**, Adeeb G. Talafha. A systematic Approach Toward Constructing Novel Solitary Wave Solutions for the Three-Wave-Interaction Equations, International Journal of Computational and Applied Mathematics. Vol. 8(2), pp.139-153, (2013).

**5 - Adeeb G. Talafha, Sahar M. Alqaraleh**, Mohammed Al-Smadi, Samir Hadid, Shaher Momani. Analytic solutions for a modified fractional three wave interaction equations with conformable derivative by unified method, Alexandria Engineering Journal, Vol. 59(5), pp. 3731-3739, (2020).

**6 - Adeeb G. Talafha, Sahar M. Alqaraleh**, Mohammed Al-Smadi, Samir Hadid, and Shaher Momani. Exact Soliton Solutions for Conformable Fractional Four-Wave Interaction Equations Using Ansatz Method, Progress in Fractional Differentiation and Applications, Vol. 8, No. 4, pp459-473, (2021).

**7 - Adeeb G. Talafha, Sahar M. Alqaraleh**, A.E El-Ahmady, Jehad Al-Jaraden On Fuzzy Fundamental Groups and Fuzzy Folding of Fuzzy Minkowski Space, Advances in Fuzzy Systems, Vol. 2021, 9 pages, (2021).

**8 - Mohammad Talafhaa, Abd Ulazeez Alkourib, Sahar Alqaraleha**, Hamzeh Zureigate and Anas Aljarrahd, Complex hesitant fuzzy sets and its applications in multiple attributes decision-making problems, Journal of Intelligent and Fuzzy Systems, Vol. 41, pp. 7299-7327, (2021).

**9 - Sahar M. Alqaraleh**, Abd Ulazeez M. J. S. Alkouri, Mourad Oqla Massadeh, **Adeeb G. Talafha**, Anwar Bataihah. Bipolar Complex Fuzzy Soft Sets and Their Application, International Journal of Fuzzy System Applications. Vol. 11(1), 23 pages, (2022).

**10 - Sahar M. Alqaraleh**, Adeeb G. Talafha, Shaher Momani, Shrideh Al-Omari, Mohammed Al-Smadi. Exact Soliton Solutions for Conformable Fractional Six-Wave Interaction Equations by the Ansatz Method, Fractals, Vol. 30, 16 pages, (2022).

**11 Adeeb G. Talafha, and Sahar M. Alqaraleh**, Novel Soliton Solutions for the Fractional Three Wave Resonant Interaction Equations, Demonstratio Mathematica, Vol. 55, pp 490 - 505, (2022).

**12 - Sahar M. Alqaraleh**, Adeeb G. Talafha, A.E El-Ahmady, On Fuzzy Fundamental Groups and Fuzzy Retraction of Fuzzy Anti-De Sitter Spacetime, submitted to the International Journal of Fuzzy System Applications, (2023).

**13 - Sahar M. Alqaraleh**, Adeeb G. Talafha, A.E El-Ahmady, The Geodesic Deformation Retract of the Hyperbolic Labachevsky Model and its Folding, submitted to the Advances in Fuzzy Systems, (2023).

\* \* *REFEREES* \* \*

1- Prof: Jehad Jardeen, Department of Mathematics, Al-Hussein Bin Talal University, Maan/  
Jordan, E-mail: [jjaradeen@ahu.edu.jo](mailto:jjaradeen@ahu.edu.jo)

2- Prof: Shaher M. Momani, Department of Mathematics, The University of Jordan, Amman/  
Jordan, E-mail: [s.momani@ju.edu.jo](mailto:s.momani@ju.edu.jo)

3- Prof: Mohammed Al-Smadi, Nonlinear Dynamics Research Center (NDRC), Ajman University,  
Ajman, UAE, Email: [mhm.smadi@yahoo.com](mailto:mhm.smadi@yahoo.com)

4- Prof: Shrideh Al-Omari, Department of Physics and Basic Sciences Faculty of Engineering  
Technology Al-Balqa Applied University, Amman, Jordan, E-mail: [s.k.q.alomari@fet.edu.jo](mailto:s.k.q.alomari@fet.edu.jo)