

CURRICULUM VITAE

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Name: Ayman Hashem Sakka

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Date of Birth: March, 1969

Place of Birth: Gaza-Palestine

Marital Status: Married

Academic Degrees:

Ph.D. Mathematics,1998
Bilkent University, Ankara, Turkey
Thesis: The Solvability of PVI Equation and Second-order
Second-degree Painlevé Type Equations,
May 1998

Supervisor: Assoc. Prof. Dr. U. Muğan

M.S. Mathematics,1995
Bilkent University, Ankara, Turkey
Thesis: Transformation Properties of Painlevé VI Equation,
September 1995

Supervisor: Assoc. Prof. Dr. U. Muğan

B.S. Mathematics,1993
Middle East Technical University, Ankara, Turkey

Language Proficiency

- Arabic: Reading, writing, speaking
- English: Reading, writing, speaking
- Turkish: Reading, speaking.

Current Research Interests:

- Differential and Taylor transformations.
- Fractional calculus and fractional differential equations.
- Numerical solutions of Painlevé equations.
- Painlevé hierarchies.
- Painlevé analysis.
- Exact solutions of nonlinear partial differential equations.

Employment History

- November 2009 to present, Professor, Department of Mathematics, Islamic University of Gaza.
- August 2015 to present, Assistant to the vice president for academic affairs.
- September 2013 to August 2015, Vice dean of Admission and Registration, Islamic University of Gaza.
- September 2011 to August 2013, Coordinator of Research Affairs, Islamic University of Gaza.
- August 2007 to August 2009, Dean of libraries, Islamic University of Gaza.
- February 2006 -August 2007, Vice dean, Faculty of Science, Islamic University of Gaza.
- August 2003-February 2006, Chairman of the mathematics department, Islamic University of Gaza.
- September 2002-August 2003, Vice dean, Faculty of Science, Islamic University of Gaza.
- September 2001-September 2002, Chairman of the mathematics department, Islamic University of Gaza.
- October 2004 - November 2009, Associate Professor, Department of Mathematics, Islamic University of Gaza.
- October 1998 - September 2004, Assistant Professor, Department of Mathematics, Islamic University of Gaza.
- October 1996 - June 1997 and February 1998-May 1998, Instructor, Department of Mathematics, Bilkent University.
- October 1993 - September 1996 and July 1997-January 1998 Graduate Assistant, Department of Mathematics, Bilkent University

Publications:

1. U. Muğan and A. Sakka, "Schlesinger Transformations for Painlevé VI Equation", J. Math. Phys., 36 (1995) 1284.
2. U. Muğan and A. Sakka, " On the Solvability of the Painlevé VI Equation", J. Phys. A:Math. Gen. 28 (1995) 4109.
3. A. Sakka and U. Muğan, " Second-order Second-degree Painlevé Equations Related with Painlevé I, II, III Equations", J. Phys. A:Math. Gen. 30 (1997) 5159.
4. A. Sakka and U. Muğan," Second-order Second-degree Painlevé Equations Related with Painlevé IV, V, VI Equations", J. Phys. A:Math. Gen. 31 (1998) 2471.
5. U. Muğan and A. Sakka," Second-order Second-degree Painlevé Equations Related with Painlevé I-VI equations and Fuchsian Type Transformations", J. Math. Phys. 44 (1999) 3569.
6. A. Sakka, " Second-order Fourth-degree Painlevé-type Equations", J. Phys. A:Math. Gen. 34 (2001) 623.
7. A. Sakka, "Bäcklund transformations for Painlevé I and II equations to Painlevé-type equations of second-order and higher degree", Phys. Lett. A 300 (2002) 228.
8. A. Sakka, " The Cosgrove's SD-I equation and Bäcklund transformations of Painlevé equations", The Islamic University Journal, Natural Science Series, Vol. 13, No. 1 (2005).
9. P. R. Gordoa, U. Mugan, A. Pickering, and A.Sakka," Bäcklund transformations for higher order Painlevé equations", Chaos, Solitons and Fractals 22 (2004) 1103.
10. U. Muğan, A. Sakka and P. M. Santini," Schlesinger transformations for discrete second Painlevé equation: $d - P_{II}$ ", Phys. Lett. A 336 (2005) 37.
11. A. Sakka, "Bäcklund transformations for fifth-order Painlevé equations", Zeitschrift-f. Naturforsch A, 60 (2005) 681.
12. A. Sakka and U. Muğan, "Bäcklund transformations for discrete Painlevé equations: $dP_{II} - dP_V$ ", Chaos, Solitons and Fractals 27 (2006) 387.
13. A. Sakka and S. Elshamy "Bäcklund transformations for fourth-order Painlevé-type equations", The Islamic University Journal, Natural Science Series, Vol. 14, No.2, (2006) 105.
14. A. Sakka and S. Elshamy "Bäcklund transformations for fifth-order Painlevé-type equations", The Islamic University Journal, Natural Science Series, Vol.15, No.1 (2007) 169.
15. A. Sakka, " Schlesinger transformations for the second members of PII and PIV hierarchies", J. Phys. A: Math. Theor. 40 (2007) 7687-7697.
16. A. Sakka and S. Elshamy, "Bäcklund transformations for Cosgrove's equation FXVIII ", Journal of Al-Aqsa University , Vol.11, (2007) 32.
17. A. Sakka, "Linear problems and hierarchies of Painlevé equations", J. Phys. A: Math. Theor., 42 (2009) 025210.

18. A. Sakka, "On special solutions of second and fourth Painlevé hierarchies", Phys. Lett. A, 373 (2009) 611.
19. A. Sakka and U. Muğan, "First-order second-degree equations related with Painlevé equations, International Journal of Nonlinear Science, Vol. 8, No.3 (2009) 259.
20. A. Sakka, "Bäcklund transformations for first and second Painlevé hierarchies", SIGMA 5 (2009), 024, 11 pages.

Conferences

1. The Third Palestinian International Conference On Mathematics. Aug. 9-12, 2000. Presented: "Second-order Second-degree Painlevé Equations Related with Painlevé I-VI equations and Fuchsian Type Transformations".
2. The Second Islamic University Conference On mathematical Sciences, Aug., 27-28, 2002. Presented: " The Cosgrove's SD-I equation and Bäcklund transformations of Painlevé equations".
3. The First International Conference of Sciences and Development, The Islamic University of Gaza, Palestine, March 1-2, 2005. Presented : "Bäcklund transformations for fifth-order Painlevé equations".
4. The First International Conference on Mathematical Sciences, Al-Azhar University of Gaza, Palestine, 15-17 May 2006, Presented: "Schlesinger transformations for the second members of PIV hierarchy",
5. The Second International Conference of Sciences and Development, The Islamic University of Gaza, Palestine, March 6-7, 2007. Presented : "Bäcklund transformations for fourth-order Painlevé-type equations".
6. The Fourth International Conference of Sciences and Development, The Islamic University of Gaza, Palestine, November 22-23, 2011. Presented : "Schlesinger transformations for the third members of PII and PIV hierarchies".
7. The Second International Conference on Basic & Applied Sciences, Al-Azhar University-Gaza, Palestine, October 10-11, 2012. Presented : "Bäcklund transformations for first and second Painlevé hierarchies".
8. Nonlinear Mathematical Physics: Twenty Years Of JNMP, June 4-14, 2013. Presented:"Schlesinger transformations for the second and third members of a third Painlevé hierarchy".

Courses taught:

- **Graduate Level:**

1. Mathematical physics.
2. Advanced mathematics for engineers.
3. Applied mathematics.
4. Ordinary differential equations.
5. Methods of applied mathematics.
5. Numerical analysis.

- **Undergraduate Level:**

1. Calculus.
2. Ordinary differential equations.
3. Applied mathematics.
4. Numerical analysis.
5. Principles of mathematics and set theory.
6. Advanced calculus.
7. Linear algebra.
8. Complex analysis.
9. Special functions.
10. Partial differential equations.
11. Abstract algebra.

Courses taken:

1. Faculty training for WebCT usage.
2. Maple for mathematics majors.
3. Organizational Assessment & Evaluation in TEIs.
4. Using Technology in Teaching.

Academic Activities (Membership):

1. Chairman of the Scientific Committee of the second conference of research affairs: Priorities of scientific research in Palestine, March 25-26, 2013.
2. Editor in chief, IUG Journal of Natural and Engineering Studies.
3. Member of Editorial Board, Journal of Mathematics and Statistics, Asia Publishers, Pakistan.
4. Referee for 2 master theses.
5. Member of the Organizing Committee of The Second Conference of the Islamic University on Mathematical Sciences Aug. 27-28, 2002.
6. Member of the Organizing Committee of The First International Conference of Sciences and Development, The Islamic University of Gaza, Palestine, March 1-2, 2005.
7. Member of the Organizing Committee of The Second International Conference of Sciences and Development, The Islamic University of Gaza, Palestine, March 6-7, 2007.
8. Member of the Organizing Committee of The Fourth International Conference of Sciences and Development, The Islamic University of Gaza, Palestine, November 22-23, 2011.

Supervision of Graduate Students

- I have been the supervisor of a Ph. D. thesis with title " Bäcklund transformations for higher order Painlevé-type equations"

- I have been the supervisor of the following master theses:
 1. On scaling reductions and Painlevé hierarchies.
 2. On Fourth Painlevé Hierarchies.
 3. Second Painlevé Hierarchies: Derivation and Basic Properties.
 4. Isomonodromy problems and Painlevé hierarchies.
 5. Schlesinger transformations for third Painlevé hierarchy.
 6. Cauchy Problem For Higher Order Painlevé Equations.
 7. Hamiltonian Structure of First and Second Painlevé Hierarchies.
 8. Transformation Properties of Discrete Painlevé Equations.
 9. On Schlesinger transformations for Higher Order Painlevé Equations.
 10. Painlevé Test For Partial Differential Equations.
 11. Transformation Properties of Painlevé Equations.

Scholarships

- Bilkent University scholarship for master degree.
- Bilkent University scholarship for Ph. D.