USMAN SALEEM

Department of Physics,
University of the Punjab,
Lahore-54590, Pakistan

Education

1. PhD in Physics   2002 - 2007
   Specialization in Theoretical and Mathematical Physics
   Title of Thesis: Symmetries and Nonlinear Systems
   Supervisor: Dr. Mahmood-ul Hassan
   Institute: Department of Physics,
   University of the Punjab,
   Lahore-54590, Pakistan

2. MPhil in Physics   2000 - 2002
   Specialization in Theoretical Physics   *First division*
   Title of Thesis: Landau Damping in Quark Gluon Plasma
   Supervisor: Dr. M. Rafiq (Late)
   Co-supervisor: Dr. G. Murtaza
   Institute: Department of Physics,
   Government College University,
   Lahore, Pakistan

3. MSc in Physics   1998 - 2000
   Specialization in Theoretical Physics   *First division*
   Title of Thesis: Calculations of Scattering Cross-Sections and Decay Rates Using Feynman Diagrams
   Supervisor: Dr. M. Rafiq (Late)
   Institute: Department of Physics,
   Government College University,
   Lahore, Pakistan

Work Experience

1. **Associate Professor (TTS)**   June 5, 2015 - Present
   Department of Physics,
   University of the Punjab,
   Lahore-54590, Pakistan

2. **Assistant Professor (TTS)**   June 5, 2009 - June 4, 2015
   Department of Physics,
   University of the Punjab,
   Lahore-54590, Pakistan

3. **Research Associate**   October 2009- July 2010
   Department of Physics and Astronomy,
   University of Rochester,
   New York, USA

4. **Lecturer**   July 11, 2008 - June 4, 2009
   Department of Physics,
   University of the Punjab,
   Lahore-54590, Pakistan

5. **Assistant Professor**   February 8, 2008 - July 10, 2008
   Department of Physics,
   Government college University (GCU),
   Faisalabad, Pakistan

6. **Lecturer**   August 8, 2006 - February 7, 2008
   Department of Physics,
   University of the Punjab,
   Lahore-54590, Pakistan

7. **Part Time Lecturer**   October 2003 - August 7, 2006
   Department of Physics,
   University of the Punjab,
   Lahore-54590, Pakistan

8. **Research Fellow**   November 2002 - October 2003
   Department of Physics,
   University of the Punjab,
   Lahore-54590, Pakistan

9. **ICTP Research Fellow**   June 2001 - November 2002
   Salam Chair in Physics,
   Government College University,
   Lahore, Pakistan

10. Teaching Assistant   January 2001 - June 2001
    Department of Physics,
    Government College University (GCU),
    Lahore, Pakistan

Awards and Scholarships

1. Research Productive Award (RPA)   2005-2008, 2010
    Pakistan Council for Science and Technology (PCST) ,
    Islamabad, Pakistan

2. Postdoctoral Research Fellowship   October 2009 - July 2010
    Higher Education Commission (HEC),
    Islamabad, Pakistan

3. 200 Merit Scholarship Scheme   November 2003 - December 2007
    Higher Education Commission (HEC),
    Islamabad, Pakistan

4. PhD Research Fellowship   November 2002 - October 2003
    Doctoral Program Committee (DPC),
    University of the Punjab,
    Quaid-e-Azam Campus,
    Lahore-54590, Pakistan

5. ICTP Research Fellowship   June 2001 - October 2002
    Office of External Activities (OEA),
    International Centre for Theoretical Physics (ICTP),
    Trieste, Italy

Research Interests

Theoretical Physics, Integrable Systems, Theory of Solitons Supersymmetry, Noncommutative Geometry, and Mathematical Physics

Taught Courses
Postgraduates, Graduate and Undergraduate Level

Integrable Systems, Partial Differential Equations, Ordinary Differential Equations, Linear Algebra, Classical Electrodynamics, Advanced Mathematical Techniques, Statistical Physics, Plasma Physics, Mathematical Methods of Physics, Classical Mechanics and Particle Physics

Research Supervision

PhD Research Supervision

1. Sana Maqbool (under supervision)

2. Hira Sarfraz (under supervision)

3. Yasir Hanif (under supervision)

MPhil Research Supervision

1. Sadia Naseem, *Aspects of Integrable Systems*, 2008-2010 (completed)

2. Muhammad Imran, *Multi-soliton Solutions of Nonlinear Systems*, 2008-2010 (completed)

3. Sana Maqbool, *Solutions of some integrable equations*, 2009-2011 (completed)

4. Atia-tu-Noor, *Conservations Laws*, 2009-2011 (completed)

5. Shaista Andleeb, *Traveling wave solutions of nonlinear partial differential equations* , 2010-2012 (completed)

6. Yasir Hanif, *Darboux transformation and Multi-solition solutions* , 2012-2014 (completed)

7. Dur-e-Adan, *Integrability of Short Pulse Equations*, 2013-2015 (completed)

8. Arooj Khan, *Exact solutions of the Korteweg de Vries equations*, 2013-2015 (completed)

9. Raazia Khanum, *Quasideterminant solution of nonlinear Schrödinger equations*, 2013-2015 (completed)

10. Zahra Azeem, *Inverse scattering transform and non-local integrable equations*, 2015-2017 (in progress)

11. Hadia Naeem, *Rogue wave solutions of nonlinear Schrödinger equations*, 2015-2017 (in progress)

Reference

1. Dr. Mahmood ul Hassan (Associate Professor)
   e-mail: mhassan@physics.pu.edu.pk
   Department of Physics,
   University of the Punjab, Quaid-e-Azama Campus,
   Lahore-54590, Pakistan

2. Dr. Ashok Das (Professor)
   e-mail: das@pas.rochester.edu
   Department of Physics and Astronomy,
   University of Rochester,
   New York, USA

3. Dr. Azmat Saeed (Associate Professor/Retired)
   e-mail: asaeed@physics.pu.edu.pk
   Department of Physics,
   University of the Punjab, Quaid-e-Azama Campus,
   Lahore54590, Pakistan

4. Dr. Muhammad Iqbal (Professor)
   e-mail: iqbal_qau@yahoo.com
   Department of Physics,
   University of the Engineering and Technology,
   Lahore, Pakistan

Memberships

1. Life time member of Pakistan Physical Society

2. Life time member of Pakistan Institute of Physics

3. Life time member of Pakistan Plasma Physics Society

List of Publications

1. Title: *Darboux transformation and exact multisolitons of CP^N nonlinear sigma model*
   Authors: **U. Saleem** and M. Hassan
   Journal: Journal of Mathematical Analysis and Applications Simulation **447** (2017) 1080-1101

2. Title: *Quasideterminant solutions of nonlinear Schrödinger equations based on Hermitian symmetric spaces*
   Authors: **U. Saleem** and M. Hassan
   Journal: Communications in Nonlinear Science and Numerical Simulation **23** (2015) 343-365

3. Title: *Conserved quantities in the generalized Heisenberg magnet (GHM) model*
   Authors: N. Mushahid, M. Hassan and **U. Saleem**
   Journal: Modern Physics Letters A **28** (2013) 1350020 (8 pages)

4. Title: *Darboux Transformation and Multisoliton Solutions of the Short Pulse Equation*
   Authors: **U. Saleem** and M. Hassan
   Journal: Journal of the Physical Society of Japan **81** (2012) 094008

5. Title: *Binary Darboux transformation and quasideterminant solutions of the chiral field*
   Authors: B. Haider, M. Hassan and **U. Saleem**
   Journal: Journal of Nonlinear Mathematical Physics **18** (2011) 299-321

6. Title: *Darboux transformation and multi-soliton solutions of Two-Boson hierarchy*
   Authors: Ashok Das and **U. Saleem**
   Journal: Modern Physics Letters A **26** (2011) 625-636

7. Title: *Darboux transformation and multi-soliton solutions of principal chiral and WZW models*
   Authors: **U. Saleem** and M. Hassan
   Journal: Modern Physics Letters A **26**, 73-85 (13pp) (2011)

8. Title: *Quasideterminant solutions of the generalized Heisenberg magnet model*
   Authors: **U. Saleem** and M. Hassan
   Journal: Journal of Physics A **43**, 045204 (12pp) (2010)

9. Title: *Darboux transformation and multi-soliton solution of a noncommutative sine-Gordon system*
   Authors: M. Siddiq, **U. Saleem** and M. Hassan
   Journal: Modern Physics Letters A **23**, 115-127 (2008)

10. Title: *Non-local continuity equations and binary Darboux transformation of noncommutative (anti) self-dual Yang-Mills equations*
    Authors: **U. Saleem**, M. Hassan and M. Siddiq
    Journal: Journal of Physics A **40**, 5205-5217 (2007)

11. Title: *Lax pair and Darboux transformation of noncommutative U(n) principal chiral model*
    Authors: **U. Saleem** and M. Hassan
    Journal: Journal of Physics A **39** (2006) 11683-11696 [arXiv:hep-th/0609127]

12. Title: *On Darboux transformation of the supersymmetric sine-Gordon equation*
    Authors: M. Siddiq, M. Hassan and **U. Saleem**
    Journal: Journal of Physics A **39** (2006) 7313-7318 [arXiv:hep-th/0605094]

13. Title:*Superfield Lax formalism of supersymmetric sigma model on symmetric spaces*
    Authors: **U. Saleem** and M. Hassan
    Journal: The European Physical Journal C **46** (2006) 797-805 [arXiv:hep-th/0605091]

14. Title: *On non commutative sinh-Gordon equation*
    Authors: **U. Saleem**, M. Siddiq and M. Hassan
    Journal: Chinese Physics Letters **22** (2005) 1076-1078 [arXiv:hep-th/0605093]

15. Title: *Conserved quantities in noncommutative principal chiral model with Wess-Zumino term*
    Authors: **U. Saleem**, M. Hassan and M. Siddiq
    Journal: Journal of Physics A **38** (2005) 9241-9250 [arXiv:hep-th/0605092]

16. Title: *Zero-curvature formalism of supersymmetric principal chiral model*
    Authors: **U. Saleem** and M. Hassan
    Journal: The European Physical Journal C **38** (2005) 521-526 [arXiv:hep-th/0501124]

List of Conferences Attended

1. Attended various conferences and seminars
   University of Rochester,   *October 2009- July 2010*
   New York, USA

2. International Workshop on Nonlinear Partial Differential Equations
   Institute for studies in Theoretical Physics and Mathematics,   *December 5-16, 2004*
   Tehran, Iran

3. Advanced School and Conference on Noncommutative Geometry
   The Abdus Salam International Centre for Theoretical Physics,   *August 9-27, 2004*
   Trieste, Italy

4. Summer School and Conference on Poisson Geometry
   The Abdus Salam International Centre for Theoretical Physics,   *July 4-22, 2005*
   Trieste, Italy

5. 9th National Symposium On Frontiers In Physics
   The Pakistan Physical Society,
   Government College University,   *January 28-30, 2003*
   Lahore, Pakistan

6. 27th International Nathiagali Summer College On Physics And Contemporary Needs
   National Centre For Physics, Quaid-i-Azam University,   *June 24-July 06, 2002*
   Islamabad, Pakistan

7. 2nd Workshop On Particle Physics
   National Centre For Physics, Quaid-i-Azam University,   *November 13-18, 2000*
   Islamabad, Pakistan

8. 8th National Symposium On Frontiers In Physics
   The Pakistan Physical Society,   *November 20-22, 2000*
   Department Of Physics, Government College,
   Lahore, Pakistan