CURRICULUM VITAE
for
Abouzeid M. Shalaby

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EDUCATION:

- **Ph.D.**, Particle Physics (2004), Physics Department, North Carolina State University, Raleigh, NC, USA.
    - o Thesis title: Non-Trivial Vacuum Solutions of Low Dimensional Scalar Field Theories in the Oscillator Representation Method.

- **M.Sc.**, Theoretical Particle Physics (2002), Physics Department, North Carolina State University, Raleigh, NC, USA.

- **M.Sc.**, Theoretical High Energy Physics (1995), Physics Department, Faculty of Science, Mansoura University, Mansoura, Egypt.
    - o Thesis title: Some Aspects of Relativistic Heavy ion Collisions.

- **B.Sc.**, Physics (1990), Physics Department, Faculty of Science, Mansoura University, Mansoura, Egypt.

POSITIONS:

September, 2012-present	Coordinator of the Physics program, Math. Statistics & Physics Department, College of Arts and Sciences, Qatar University, Doha, Qatar.
August, 2010-present	Associate Professor, Math. Statistics & Physics Department, College of Arts and Sciences, Qatar University, Doha, Qatar.
October, 2009-present (Permanent)	Associate Professor, Physics Department, Faculty of Science, Mansoura University, Mansoura, Egypt.
2007-2010	Assistant Professor, Physics Department, Faculty of Science, Qassim University, Buraidah, Saudi Arabia.
2004-2009 (Permanent)	: Assistant Professor, Physics Department, Faculty of Science, Mansoura University, Mansoura, Egypt.
2006-2007	: Member in The Center for theoretical Physics, British University in Egypt (BUE), Cairo, Egypt.
2001-2004	: Teaching Assistant, Physics Department, North Carolina State University, Raleigh, NC, USA.
1995-2000	: Assistant Lecturer, Physics Department, Faculty of Science, Mansoura University, Mansoura, Egypt.
1990-1995	: Teaching Assistant, Physics Department, Faculty of Science, Mansoura University, Mansoura, Egypt.

RESEARCH EXPERIENCE:

2011-present	Self-Adjoint extensions of Quantum Mechanics
2004-present	: Non-Hermitian Field Theories and the Higgs Particle.
2004-2006	: Non-perturbative tools in Quantum Field Theory.
2000-2004	: Duality, canonical transformations and Phase transition in Quantum Field Theory.
1995-2000	: A Modified Model in Relativistic Heavy Ion Collisions.
1992-1995	: Thermodynamic models in Relativistic Heavy Ion Collisions.

TEACHING EXPERIENCE:

2004-present	: Nuclear Physics, Statistical Mechanics, Quantum Field

Theory, Modern Physics, Quantum Statistical Mechanics, Phase transitions, Particle Physics and General Physics**.**

2003-2004 : Honor Labs, Physics Department, North Carolina State University, Raleigh, NC, USA.

2001-2003 General Physics Labs. Physics Department, North Carolina State University, Raleigh, NC, USA.

1992-2000 : Physics Labs, Physics Department, Faculty of Science, Mansoura University, Mansoura, Egypt.

PUBLICATIONS:

1. *Abouzeid M. Shalaby PT-symmetric ideas for the solution of hierarchy and fine tuning problems in the standard model, CIPANP 2012 - Eleventh Conference on the Intersections of Particle and Nuclear Physics*

2. *Abouzeid M. Shalaby, LINKED PT-SYMMETRY TO SUPERSYMMETRY IN A CLASS OF NON-HERMITIAN HAMILTONIANS,* International Journal of Modern Physics A, Vol. 27, No.10 (2012).

3. *Abouzeid M. Shalaby, REPRESENTATION DEPENDENCE OF SUPERFICIAL DEGREE OF DIVERGENCES INQUANTUM FIELD THEORY,* International Journal of Modern Physics A, Vol. 26, No.17 (2011).

4. *Abouzeid M. Shalaby* and Suleiman S. Al-Thoyaib, *Non-perturbative tests for the Asymptotic Freedom in the PT-Symmetric $(-\phi^4)_{3+1}$ theory, PHYSICAL REVIEW D 82, 085013 (2010)*

5. *Abouzeid M. Shalaby, Possible treatment of the Ghost states in the Lee-Wick Standard Model, PHYSICAL REVIEW D 80, 025006 (2009).*

6. Abouzeid Shalaby, New ansatz for metric operator calculation in pseudo-Hermitian field theory, *PHYSICAL REVIEW D 79, 107702 (2009).*

7. Abouzeid Shalaby, Effective field calculations of the energy spectrum of the PT-symmetric ($-x^4$) potential, *PHYSICAL REVIEW D 79, 065017 (2009).*

8. Abouzeid Shalaby and M. El-Houssieny, Toward A Strongly Interacting Scalar Higgs Particle, AIP Conf.Proc.1006:154-157, 2008.

9. Abouzeid. M. Shalaby, Novel phase in the phase structure of the $(g\phi^4 +h\phi^6)_{1+1}$ field theoretic model, PHYSICAL REVIEW D **76,** 041702 (Rapid **Communication**) (2007).

10. Abouzeid. M. Shalaby, Non-perturbative calculations for the effective potential of the PT symmetric and non-Hermitian $(-g\phi^4)$ field theoretic model, Eur.Phys.J.C 50:999-1006, 2007.

11. Abouzeid. M. Shalaby and S. T. El-Basyouny, A non-perturbative calculation for the effective potential of the $(g\phi^4 - J\phi)_{1+1}$ scalar field theory using the Oscillator Representation method with Borel resummation, International Journal of Modern Physics A, Vol. 22, No.6 (2007).

12. Abouzeid. M. Shalaby and S. T. El-Basyouny , Critical exponents from the resummed effective potential of the $(g/4\ \phi^4 - J\phi)_{1+1}$ scalar field theory, Int.J.Theor.Phys.46:1617-1635, 2007.

13. Shalaby A M, The fractal self-similar-Borel algorithm for the effective potential of the scalar field theory in one time plus one space dimensions, Chaos, Solitons & Fractals 34:709-716, 2007.

14. Abouzeid. M. Shalaby, The Effective Potential for the PT symmetric and non-Hermitian ($-g\phi^4$) field theoretic model, Czech. J. Phys. Vol. 56 No 9, 2006.

15. Suleiman S. Al-Thoyaib and Abouzeid. M. Shalaby, On Scalar Field Theories with Complex Hamiltonians, Proceeding of the 4th meeting of the Saudi- Physical society (KACST) .

16. Chueng-Ryong Ji, Yuriy Mishchenko and Abouzeid Shalaby, Duality and canonical transformations in the scalar field theory, Recent Research Developments in Physics, Vol. 5, Part III (Book, Transworld Research Network, ISBN 81-7895-126-6).

17. Ali Elshikh and Abouzeid. M. Shalaby, Energy Extreme Limits for the FireStreak and Fireball models, U. scientist phy1. Sciences vol. 9, no.1, 18-28 (1997).

18. Abouzeid. M. Shalaby, Block Spin like treatment of the critical region in quantum field theory in view of the Oscillator Representation method (Proceeding of the 5th international conference (basic sciences session)), 2006.

Articles prepared for publications:

19. Abouzeid Shalaby, Bounded from below Effective Potential for the PT-Symmetric ϕ^4 Theory Scalar Field Theory arXiv:0902.4565[hep-th].

20. Abouzeid Shalaby, Is Non-Renormalizability a Technical or a Conceptual Problem? A Clue from Quasi-Hermitian Representations arXiv:0805.1247[hep-th].

21. Abouzeid Shalaby, Will the PT Symmetric and Non-Hermitian ϕ^4 Theory Solve the Hierarchy and Triviality Problems in the Standard Model?, arXiv:0712.252 [hep-th].

CONFERENCES:

1. Eleventh Conference on the Intersections of Particle and Nuclear Physics in St. Petersburg, FL, USA, May 2012.

   • http://cipanp2012.triumf.ca/index.html

2. **4th** meeting of the Saudi- Physical society, KACST, King Abdul Aziz City for Science and Technology, Saudi Arabia, November 2008.
   On Scalar Field Theories with Complex Hamiltonians

3. Quantum Physics with Non-Hermitian Operators (PHHQP VII), CENTRO DE CIENCIAS DE BENASQUE "PEDRO PASCUAL" and Barcelona University, Spain.
   • http://benasque.ecm.ub.es/2008pt/2008pt.htm

4. UAE-CERN Workshop, High Energy Physics and Applications, 26-28 November 2007, Al-Ain, United Arab Emirates.
   - Toward A Strongly Interacting Scalar Higgs Particle.
   - http://www.fsc.uaeu.ac.ae/physics/UAE-CERN.html
5. 6th International Workshop on Pseudo Hermitian Hamiltonians in Quantum Physics (City University, London, 16th-18th of July 2007).
   - Hermiticity breaking and restoration in the $(g\phi^4 + h\phi^6)_{1+1}$ field theoretic model.
   - http://www.staff.city.ac.uk/~fring/PT/
6. CTP Symposium on Supersymmetry at LHC: Theoretical and Experimental Prospectives (11- 14 March 2007), the British University in Egypt (BUE).
   - http://www.bue.edu.eg/centres/ctp/workshops/ctp-workshop001/
7. SM&FT 2006, The XIII workshop on Statistical Mechanics and non Perturbative Field Theory, Bari (Italy), September 2006,
   - The fractal self-similar-Borel algorithm with applications to the specific heat exponent of XY model and the effective potential of ϕ^4 Scalar Field Theory.
   - http://www.ba.infn.it/~smft2006
8. The 5th international conference (basic sciences session)
   - "Block Spin like treatment of the critical region in quantum field theory in view of the Oscillator Representation method"
   - http://conf.mans.edu.eg/iec5/english/.
9. The American Physical society , SESAPS, NOVEMBER 2003,
   - "Canonical Transformation and Duality in the $(\phi^4 + \phi^6)_{2+1}$ scalar field theory".
   - (http://www.aps.org/meet/SES03/baps/abs/S260.htmlSMC.004).
10. The American Physical society meeting (DPF2002)
    - "The Phase Transition in the (2+1) dimensional ϕ^6 Scalar Field Theory"
    - http://www.dpf2002.org/non-perturbative qft.cfm.
11. The American Physical society , SESAPS, NOVEMBER 2002,
    - "The Phase Structure of the (2+1) Dimensional $\phi^4 + \phi^6$ Scalar Field Theory".
    - (http://www.aps.org/meet/SES02/baps/abs/S210.html#SKB.003).

HONORS/RECOGNITIONS
- A $ 800,000 NPRP awarded project from Qatar Foundation (2012).
- Qatar University Research Award, 2011.
- National Award of Egypt in Physics, 2009.

- Award of Distinguished University Research Paper from Qassim University, 2009.
- Egyptian State prize "AMEN LUTFY" in Physics, 2010.
- Misr el kheir Foundation publications Award, 2010.
- Award for Excellence from Faculty of Science, Mansoura University, Mansoura, Egypt, 1989.

PROFESSIONAL SOCIETIES
- American Physical Society.
- Pi Mu Epsilon, the Honorary National Mathematics Society.

University and College Committees
- Performance Improvement Committee (Math & Physics Department, CAS, QU, 2010-2012)
- Research Committee (Math & Physics Department, CAS, QU, 2010-2011)
- QU CAS- CENG Joint Committee (Qatar University, 2011-2012)
- Curriculum committee (Math & Physics Department, CAS, QU, 2011-2012)
- Schedule committee (Math & Physics Department, CAS, QU, 2012-present)
- Strategic plan committee (Math & Physics Department, CAS, QU, 2012-present)

SEMINARS:
- Toward a PT-symmetric Higgs mechanism, Albert Einstein Center for Fundamental Physics, Bern University, Switzerland, 2011.
- Higgs Mechanism Features and Problems, Centre for Theoretical Physics at the British University in Egypt (BUE), 2007.
- Path Integral Quantization, Centre for Theoretical Physics at the British University in Egypt (BUE), 2007.
- "Non-Perturbative tools in quantum field theory", Centre for Theoretical Physics at the British University in Egypt (BUE), 2006.
- "Forces in Our Universe", Physics Department, Faculty of Science, Mansoura University, Egypt, 2006.
- "Physics and Beauty", the effective talk session held in Faculty of Science, Mansoura University, Egypt, 2006.

PARTICIPATION/ORGANIZING TRAINING WORKSHOPS:

- Effective Talk training workshop.
- Technical Education workshop.
- Quality Assurance and Accreditation workshop.
- Building and Managing Courses workshop.
- Blackboard 9 –Creating Assignments and Providing Feedback to Students
- The Citation Management Software
- QU Academic Promotion Policies
- Course Design and Learning Outcomes Assessment

COMPUTER PACKAGES:

- MATLAB
- ORIGIN
- MAPLE
- MATHEMATICA
- LATEX
- Microsoft Office