NOUREDDINE CHAIR

CONTACT INFORMATION	Physics Building Office 313 Department of Physics University of Jordan *E-mail:* nchair@ju.edu.jo Amman, Jordan

PERSONAL DATA

Date of birth:	*July 28, 1957.*
Place of birth:	*Constantine, Algeria.*
Nationality:	*Algerian.*
Sex:	*Male*
Marital status:	*Married, with 6 children*

RESEARCH INTERESTS

String theory.
Matrix models.
Topological field theory.
Topological Insulators.
Quantum Spin Hall effect.
Electrical network and graph theory.
Interaction between Number theory and Physics.

EDUCATION

International School for Advanced Studies (SISSA), Nov, 1985-Oct, 1988 Trieste, ITALY

Ph. D. Mathematical Physics

- Dissertation Topic: "Geometrical Aspect of Non-Linear σ-Model And String Theory"
- Advisor: Cesare REINA

International School for Advanced Studies (SISSA), Jan, 1984-Oct, 1985 Trieste, ITALY

M. Phil. Elementary Particle, Oct, 1985

Liverpool University, Oct, 1976- Jun, 1981, Liverpool UK

B.Sc. Physics, Jun, 1981

ACADEMIC EXPERIENCE

ICTP, Postdoctoral Fellow, Oct, 1988-Sept, 1992 Trieste, ITALY

SISSA, Visiting Scientist, Jun, 1993-Sept, 1993, Trieste, ITALY

Al-Fateh University, Senior Lecturer, Oct, 1993-Aug, 1996, Tripoli, LIBYA

ICTP & SISSA, Visiting Scientist, Aug, 1996-Aug, 1997, Trieste, ITALY

AL. al Bayt University, Assistant Professor, Sep, 1997 - May, 2008, Associate Professor, May, 2008 - Jun, 2009 Mafraq, JORDAN

University of Jordan, Associate Professor, Sept, 2009 - Feb 2014, Amman, JORDAN

University of Jordan, Professor, Feb, 2014 -current, Amman, JORDAN

PUBLICATIONS

1. N. CHAIR
   Two-Dimensional N=1 Supergraphs and Explicitly Broken Supersymmetries, *Phys. Lett. B 189 (1987) 105-110.*
2. N. CHAIR. J.A. HELAYEL-NETO and A. WILLIAM SMITH
   On The Ultraviolet Behaviour of softly Broken $N = 1$ Supersymmetric Non-Linear σ - Models,

Phys. Lett. B 195 (1987) 407-412.

3. N. CHAIR

   An Explicit Computation for the Bose-Fermi Equivalence on Riemann Surfaces of Genus g, *International Journal of Modern Physics A 4 (1989) 4437-4447.*

4. N. CHAIR , J. A. HELAYEL-NETO and A. WILLIAM SMITH

   A less Constrained (2,0) Super-Yang-Mills Models, *Phys. Lett. B 233 (1989) 173-177.*

5. N. CHAIR and C. J. ZHU

   Polynomial Equation and Modular Transformations in Topological Field Theory, *Phys. Lett. B 247 (1990) 323-330.*

6. N. CHAIR and C. J. ZHU

   Tetrahedra and Polynomial Equations in Topological Field Theory, *International Journal of Modern Physics A 20 (1991) 3571-3598.*

7. N. CHAIR

   The (Orbifold) Euler Characteristic of the Moduli Space of Curves and the Continuum Limit of Penner's Generating Function, *Reviews in Mathematical Physics, vol. 3 (1991) 285-300.*

8. N. CHAIR and S. PANDA

   Correlation Functions and Shwinger Dyson equations for Penner's Model, *Phys. Lett. B 272 (1991) 230-238.*

9. N. CHAIR N.K. DOBREV and H. KANNO

   $So(2,C)$ Invariant Ring Structure of BRST Cohomology and Singular Vectors in $2D$ Gravity With $C < 1$ Matter, *Phys. Lett. B 283 (1992) 194-203.*

10. CHAIR

    The Waring formula and Fusion Rings, *Journal of Geometry and Physics 37 (2001) 216-228.*

11. N. CHAIR

    Intersection Numbers on Grassmannians, and on the Space of Holomorphic Maps from CP^1 into $G_r(C^n)$, *Journal of Geometry and Physics 38 (2001) 170-182.*

12. N. CHAIR and M.M. Sheikh-Jabbari

    Pair Production by a Constant External Field in Noncommutative QED, *Physics Letters B 504 (2001) 141-146.*

13. N. CHAIR and Mohammed A Dalabeeh

    The noncommutative quadratic Stark effect for the H- atom, *J. Phys.A: 38 (2005)*

14. N. CHAIR

    Perturbative Chern-Simons Theory From The Penner Model, *Journal of PhysicsA: Mathematical And Theoretical, FTC, 40 F443* (2007)

15. N.CHAIR

    Comment on "Remark on the renormalization group equation for the Penner model", *Physical Review D 75,127901 (2007)*

16. M. A. Dalabeeh N. Chair

    The symplectic - orthogonal Penner models, *Journal of Physics A: Mathematical and Theoretical. 43 465204 (2010).*

17. N Chair, A Al Jamel, M Sarhan, M Abu Sini and E M Rabie

    The noncommutative quadrupole field effect for the H-atom, *Journal of Physics A: Mathematical and Theoretical, 44 095306 (2011).*

18. N.Chair and M. A. Dalabeeh

    SO/Sp Chern-Simons Gauge Theories at Large N, SO/Sp Penner Models and the Gauge Group Volumes, *Progress of Theoretical Physics, Vol. 127, No. 2, February (2012).*

19. Noureddine Chair

    Exact two-point resistance, and the simple random walk on the complete graph minus N edges, *Ann. Phys. 327, No. 12, 3116-3129 (2012).*

20. Noureddine Chair.

    Generalized Penner model and the Gaussian beta ensemble. *Nuclear Physics B, Volume 878, January 2014, Pages 169-185*

21. Noureddine Chair

    The effective resistance of the N -cycle graph with four nearest neighbors,*Journal of Statistical Physics. Journal of Statistical Physics February 2014, Volume 154, Issue 4, pp 1177-1190.*

22. Noureddine Chair

    The Euler-Riemann Gases, and Partition Identities, *Nucl.Phys. B872 72-105 (2013)* .

23. Noureddine Chair

    Trigonometrical sums connected with the chiral Potts model, Verlinde dimension formula, two-dimensional resistor network, and number theory. *Annals of Physics, Volume 341, Pages 56–76 (2013).*

24. Noureddine Chair and Elham Mohammed Ali Dannoun

    Two-point resistance of the Mo¨bius ladder,*Physica Scripta 90(3) · March 2015.*

25. Mohammad Shikakhwa and Noureddine Chair

    Hermitian spin–orbit Hamiltonians on a surface in orthogonal curvilinear coordinates: A new practical approach, *Physics Letters A 380(22-23) 2016.*

26. Mohammad Shikakhwa and Noureddine Chair

    Hamiltonian for a particle in a magnetic field on a curved surface in orthogonal curvilinear coordinates,*Physics Letters A Physics Letters A 380 2876–2880, 2016.*

27. Ayed Alsharafat, Noureddine Chair

    Factorization of the bosonic partition function,.Lett. A 381 1118-1122 (2017).

28. Mohammad Shikakhwa and Noureddine Chair

    Hermitian and Gauge-Covariant Hamiltonians for a particle in a magnetic field on Cylindrical and Spherical Surfaces,*European Journal of Physics Volume 38, Issue 1, pp. 015402 (2017)*

29. N.Chair , M.A. Dalabeeh

    An exact treatment of the Dirac delta derivative potential. European Journal of Physics Volume 42, pp. 065402 (2021)

30. M.A. Dalabeeh, N.Chair

    Completeness and orthonormality of the energy eigenfunctions of the Dirac delta derivative potential, European Journal of Physics Volume 43, pp. 025402,(2022)

31. Mohammad Shikakhwa and Noureddine Chair

    Constructing Hermitian Hamiltonians for spin zero neutral and charged particles on a curved surface: physical approach European Physical Journal Plus Volume 137 pp 560, (2022)

32. Al-Banawi, Mohammad Qasem Owaidat, Noureddine Chair

    Lattice vibrations of the face-centered square and edge-centered square lattices, *February 2023, International Journal of Modern Physics B*

33. Mohammad Shikakhwa and Noureddine Chair

    Hamiltonian, Geometric Momentum and Force Operators for a Spin Zero Particle on a Curve: Physical Approach

    https://doi.org/10.48550/arXiv.2401.13664 (Jan 24, 2024)

TEACHING   **UNDERGRADUATE**

Classical Mechanics, Statistical Physics, Quantum Mechanics, Electromagnetic Theory, Solid State Physics, Special Relativity, Mathematical Physics, and General Physics.

GRADUATE

Classical Mechanics, Electromagnetic Theory, Statistical Mechanics, Quantum Mechanics, Mathematical Physics, Quantum Field Theory, General Relativity, Solid State Physics, and Elementary Particle Physics.

SUPERVISION   I have supervised more than twenty doctoral dissertations and master theses. Currently, two Students, one Ph.D Student and one M.Sc Student are carrying out their research work under my supervision.