CURRICULUM-VITAE

Personal Data:

Name	Pragya Shukla
Nationality	Indian
Gender	Female
Permanent Home Address	C/O Shri V.N.Shukla L.I.G 44, Ratanlal Nagar-208022 Kanpur (U.P), India.
Email :	Shukla_P99@Yahoo.Com
Tel:	(91)-(512)-2280696

Job Status and Address:

(I) Permanent Position:	Professor Department Of Physics Indian Institute Of Technology Kharagpur, W.B., India
Email :	Shukla@Phy.Iitkgp.Ernet.In
Tel(Office):	(91)-(3222)- 283850
Fax:	(91)-(3222)-282700 (Also 255303)
(Ii) Other Affiliation;	Senior Associate International Center For Theoretical Physics, Trieste, Italy.

EDUCATIONAL QUALIFICATIONS:

Doctorate (Ph.D.)

Place	School of Physical Sciences Jawahar Lal Nehru University New Delhi, India (1987-92)
Topic	Symmetry-breaking in quantum chaotic systems
Supervisor	Dr. A.Pandey School of Physical Sciences Jawahar Lal Nehru University New Delhi-110067, India

Masters In Science (M.Sc)

University	Indian Institute of Technology Kanpur, India (1984-86)
Subject	Physics

Bachelor In Science (B.Sc)

University	Kanpur University Kanpur, India (1981-83)
Subject	Physics, Chemistry, Mathematics

Visits Abroad (Long Term):

(I) Status	**Visiting Scholar**
Year	(i) 2007 (Aug)-2007 (Nov) (ii) 2011 (Aug) – 2011 (Dec) (iii) 2015 (Aug) -2016 (june)
Institute	University of Illinois at Urbana-Champaign, USA

(Ii) Status	**Visiting Fellow**
Year	2008 Dec
Institute	Newton Institute of Mathematical Sciences, University of Cambridge, U.K.

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(Ii) Status	**Visiting Assistant Professor**
Year	2003-2004
Institute	University Of Illinois at Chicago, Chicago, USA.

(Iii) Status	**Guest Scientist Position**
(1) Year	2015 (12 July) – 2015 (28 July) Aspen center for Physics, Aspen, USA
(2) Year	(i) 2014 (June) -2014 (June) (ii) 2012 (June)-2012 (June) Institute of Quantum Computing, University Of Waterloo, Canada
(3) Year	2006 (Sept) – 2006 (Dec)
Institute	University Of Oxford, UK
(4) Year	(i) 2002 (June)- 2002 (Dec)
I4stitute	Max-Planck Institute For Complex Systems, Dresden, Germany
(5) Year	2001 (1 June)- 2001 (30 June)
Institute	Max-Planck Institute For Nuclear Physics, Heidelberg, Germany

(6) Year	2000 (1 June)- 2000 (30 June)
Institute	University Of Koln, Germany
(7) Year	1994-1996
(A) Institute	Institute De Physique Nucleaire Service De Physique Theorique 91406 Orsay Cedex, France
(B) Institute	Fachbereich Physik Universit\"At Gh-Essen D-45117 Essen, Germany
(C) Institute	Institut Henri Poincare Service De Physique Theorique 91406 Paris Cedex, France

(Iii) Status	**Post-Doctoral Research**
Year	1992-1994
Institute	Service De Physique Theorique C.E.N. De Saclay France

Post-Doctoral Research In India:

Status	Research Associate
Year	1996-1998
Institute	Jawaharlal Nehru Centre For Advanced Research Indian Institute Of Science, Banglore.

Other Academic Activities

(i) Development of NPTEL Web course “Random Matrix theory and Applications”

(ii) Review Editor of “Frontiers in Mathematical Physics”, EPFL, Switzerland.

(iii) Referee for APS journals

(iv) Coordinator of Physics paper, jee-2005

(v) Selection committee member of KVPY 2012, DST.

(vi) Selection Committee member of Indo-Canada exchange fellowships, 2011, 2012

(vii) Chairperson of Physics-Society

(viii) Coordinator of Journal Club and Research-scholars day (2010)

(ix) Member of local organizing committee of "National conference on complex systems " Dec 2003, held in IIT Kharagpur, India.

(x) Organized a workshop on the "National workshop on nonlinear dynamics", IIT, Kharagpur, India, 29 feb - 3 mar 2000.

(vii) Guidance of 15 M.Sc level students for their M.Sc projects.

(viii) Guidance of three Ph.D students (one completed).

(ix) Faculty advisor of B.Tech (Physics) (2001) batch.

(x) Member of various departmental committees, IIT Kharagpur, India.

SPONSORED PROJECTS

(i) **“Study of Transport Properties and Localization of Waves in Random Media”** funded by department of science and technology, India (No. SR/S2/CMP-55/2004, Dt. 01-08-2006, Currently going on).

(ii) **“Statistical Studies of Complex Systems”** (ISIRD Project, year 1999-2001).

SCHOLARSHIP-AWARDS

(i) 2012-2018 Senior Associateship in ICTP, Trieste, Italy

(ii) 2008 **Visiting Fellow** at Newton Institute of Mathematical Sciences, University of Cambridge, U.K.

(iii) 2007 **Visiting Scientist "TGAP" award** by American Physical Society, USA (to work with noble laureate Prof. A.Leggett).

(iv) 2006 **Exchange visiting Scientist award** by Royal Society, UK and Indian National Science Academy, India.

(v) 2003-04 **Visiting Assistant Professor Position** in University of Illinois at Chicago, USA.

(vi) 2002-07 **Regular Associateship** in ICTP, Trieste, Italy

(vii) 2002 **Guest Scientist Position** in Max-Planck Institute for complex systems, Dresden, Germany.

(viii) 2004-06 **Invited Speaker for Theoretical Physics Science Circuit (**TPSC) in India.

(ix) 1987-92 **Junior Research Fellowship**, Council of Industrial and Scientific Research (CSIR), INDIA.

(x) 1981-83 **Indian National Merit Scholarship**, INDA.

(xi) 1977-81 **U.P State Government Scholarship**, INDIA.

My research papers with special international recognitions:

(i) *"Superadiabatic optical forces on a dipole: exactly solvable models for a vortex field"* **(**J. Phys. A, 47, 125201 (2014) **) was selected for inclusion in IOPSelect by Institute of Physics Publications UK.**

(ii) *"physical curl forces: dipole dynamics near optical vortices"* **(**J. Phys. A, 46, 422001, (2013) **) was selected as "highlight of 2013" in J. Phys. A, UK by Institute of Physics Publications UK.**

(ii*) "Anderson Localisation in tight-binding models with flat bands",* (Phys. Rev. B 82, (2010), 104209) was chosen **as "Editors choice" paper in American Physical Society (APS) journals**.

(ii) *'"High-order classical adiabatic reaction forces: slow manifold for a spin model"* (J. Phys. A. Math. & Theo. 43, (2010), 045102) has been selected to **be part of the Journal of Physics A: Mathematical and Theoretical, IOP publications, Highlights of 2010 Collection**.

(iii) The abstract of my *paper "Can apperent superluminal neutrino speeds can be explained as a quantum weak measurement?"* J. Phys. A: Math. Theor. 44, 492001), IOP publications, was **considered as "best abstract ever" in year 2011 on Internet.**

PUBLICATIONS

(49) Localization to Delocalization Transitions: is Rosenzweig-Porter ensemble the hidden skelton?
P. Shukla, New J. of Phys (IOP) 18, (2), 021004, (2016).

(48) Curl force dynamics: symmetries, Chaos and constants of motion
M.V. Berry and P. Shukla, New J. of Phys (IOP) 18, (6), 063018, (2016).

(47) Weak Measurements: typical weak and superweak values
P. Shukla, Current Science, special issue, (2015).

(46) Random matrix ensembles with column/ row constraints: II
S. Sadhukhan and P. Shukla, J. Phys A, 48, 415003, (2015).

(45) Random matrix ensembles with column/ row constraints: I
P. Shukla and S. Sadhukhan, J. Phys A, 48, 415002, (2015).

(44) Hamiltonian curl forces
M.V.Berry and Pragya Shukla, Proc. Roy. Soc. A, 471, 0002, (2015).

(43) Universality classes in Coulomb blockade conductance peak-height statistics
D.Dey and P. Shukla, Phys. Rev. E, 90, 052118, (2014).

(42) Superadiabatic optical forces on a dipole: exactly solvable model for a vortex field
M.V. Berry & Pragya Shukla, J. Phys. A, 47, 125201 (2014)

(41) Physical curl forces: dipole dynamics near optical vortices,
M V Berry and P. Shukla, J. Phys. A, 46, 422001 (2013).

(40) Hearing random matrices and random waves
M V Berry and P. Shukla, New Journal of Physics, 15, (1), 013026, (2013).

(39) Generalized random matrix theory: a mathematical probe for complexity
P. Shukla, Int. Jou. of Mod.Phys B (WSPC), 26, 12300008, (2012).

(38) Classical dynamics with curl forces, and motion driven by time-dependent flux,
M V Berry and P. Shukla, J. Phys. A: Math. Theor. 45, 305201, (2012).

(37) Can apperent superluminal neutrino speeds can be explained as a quantum weak measurement?
M V Berry, N. Bruner, S. Popescu and P. Shukla, J. Phys. A: Math. Theor. 44, 492001, (2011).

(36) Pointer supershifts and superoscillations in weak measurements,
M.V. Berry and P. Shukla, J. Phys. A: Math. & Theo., 45, 015301, (2011).

(35) Conductance fluctuations in almost closed quantum dots of arbitrary shape
D.Dey and P. Shukla, Phys. Rev. B. 84, 195318, (2011).

(34) Weak value distribution for spin 1/2
M.V. Berry, M R Dennis, B. Mcroberts and P. Shukla, J. Phys. A. Math. & Theo. 44, (2011), 20530 (8pp)

(33) Slow manifold and Hannay angle in the spinning top
M.V. Berry and P. Shukla, Eur. J Phys, 32 (2011), 115 (13pp).

(32) Anderson Localisation in tight-binding models with flat bands
J.T.Chalker, T.S.Pickles and P. Shukla, Phys. Rev. B 82, (2010), 104209 (5pp).

(31) Thermodynamics of protein folding: a random matrix formulation
P.Shukla, J. Phys. C: Condens Matter, 22, (2010), 415106 (8 pp).

(30) Typical weak and superweak values
M.V. Berry and P. Shukla, J. Phys. A: Math. & Theo., 43, (2010), 354024 (9pp) .

(29) Higher-order classical adiabatic reaction forces: slow manifold for a spin model
M.V. Berry and P. Shukla, J. Phys. A. Math. & Theo. 43, (2010), 045102 (27 pp).

(28) Spacing distributions for real symmetric 2X2 generalized Gaussian ensembles
M.V. Berry and P. Shukla, J. Phys. A: Math. & Theo. 42, (2009), 485102 (13pp).

(27) Tuck's incompressibility function: statistics for eigenvalues and zeta zeros
M.V. Berry and P. Shukla, J.Phys. A Math. & Theo, 41, (2008), 304023, .

(26) Criticality in the kicked rotor with a smooth potential
R. Dutta and P. Shukla, Phys. Rev. E, 78, (2008), 031115,.

(25) Towards a common thread in complexity: an accuracy based approach
P. Shukla, J. Phys. A Math. & Theo, 41, (2008), 304023.

(24) Complex systems with half-integer spins: symplectic ensembles
R. Dutta and P. Shukla, Phys. Rev. E, 76, (2007), 051124.

(23) Eigenfunction statistics of complex systems: a single parametric formulation
P. Shukla, Phys. Rev. E 75 (5), (2007), 051113(1-20).

(22) Eigenfunction Statistics Of Complex Systems: Universality In Diversity
P. Shukla, Proceedings of the third national conference on nonlinear systems and dynamics (NCNSD-2006), Chennai, India

(21) Random matrices with correlated elements: a model for disorder with interactions
P. Shukla, Phys. Rev. E, (71), (2005), 026226(1-13).

(20) Level-statistics in disordered systems: a single parametric scaling and connection to brownian ensembles
P. Shukla, J. Phys.: Condens. Matter 17, (2005) 1653-1677.

(19) Multi channel transport in disordered medium under generic scattering conditions
P. Shukla and I. Batra, Phys. Rev. B. 71, (2005) 235107(1-14).

(18) Signatures of random matrices in physical systems
P. Shukla, Physica A, 315, (2002) 53-62.

(17) Statistical studies of complex systems: a random matrix approach
P. Shukla, Physica A, 315, (2002) 45-52.

(16) Non-hermiticity and calogero-sutherland hamiltonian
P. Shukla, Phys. Rev. Lett. 87, 19, (2001) 194102-.

(15) Eigenvalue correlations for banded matrices
P. Shukla, Physica E, 9 (3) (2001) 548-553.

(14) Eigenvalue correlations of generalized gaussian matrices
P. Shukla, Physica A, 288, (2000) 119-129.

(13) Alternative technique for "complex" spectra analysis
P. Shukla, Phys. Rev. E, 62, (2000) 2098-2113.

(12) The $1/R^2$ Integrable System: A Universal Hamiltonian For Complex Level Dynamics
P. Shukla, Proceedings of the conference on "Disordered and Complex Systems", (King's College, London, Uk, July 10-14, 2000).

(11) Universal level dynamics of complex systems
P. Shukla, Phys. Rev. E, 59, (1999) 5205-5213.

(10) Parametric Correlations In Quantum Chaotic Systems
P. Shukla, Proceedings of PRL golden jubliee conference on nonlinear dynamics & computational physics (Physical Research Laboratory, Ahmedabad, India, Nov. 18-22,1997).

(9) On the distribution of zeros of "chaotic" wave-functions
P. Shukla, J. Phys. A, 30, (1997) 6313-6326.

(8) Higher order correlations in quantum chaotic spectra
P. Shukla, Phys. Rev. E, 55, 4, (1997) 3886-3897.

(7) The effect of symmetry-breaking in quantum chaotic map
P. Shukla and A. Pandey, Nonlinearity, 10, (1997) 979- 1006

(6) Universal fluctuations of zeros of chaotic wavefunctions
P. Leboeuf and P. Shukla, J. Phys. A, 29, 8, (1996), 4827-4835.

(5) Effect of symmetry-breaking on "chaotic" eigenfunctions
P. Shukla, Phys. Rev. E., 53, 2, (1996), 1362-1370.

(4) Level spacing functions and the connection problem of a fifth painleve trancendent
P. Shukla, J. Phys. A., 28, (1995), 3177-3195.

(3) Two coupled matrices: eigenvalue correlations and spacing functions,
M.L. Mehta and P. Shukla, J. Phys. A., 27, (1994), 7793-7803.

(2) Symmetry breaking in quantum chaotic systems
A. Pandey, R. Ramaswamy and P. Shukla, Pramana, Indian J. Of Phys., 41, 1, 1993, L75-L81.

(1) Eigenvalue correlations in the circular ensembles
A. Pandey and P.Shukla, J. Phys. A, 24, (1991), 3907-3926.

Summary Of Research Problems Undertaken So Far

My recent research studies have been oriented in four directions:

(1) System-dependent Random matrix ensembles:

The ignorance of the detail in a complex system introduces a degree of randomness in its matrix representation and it can be modeled by a random matrix (with some or all random entries). Nanophysics and disordered systems are two of the most industrially and technologically relevant areas of complex system. One of their main characteristics is the mesoscopic fluctuations of physical properties which can be well-modeled by system dependent, multi-parametric random matrix models. My analytical work during past ten years has led to a single parametric, common mathematical formulation of these fluctuations in presence of both disorder and particle-particle interactions. This also reveals universality as well as a deep web of connection underlying the world of complex systems.

(2) Weak measurements (with Prof. M. Berry)

Quantum physics is being transformed by a radical new conceptual and experimental approach known as weak measurement: it is a way of probing a quantum system so gently that the famous measurement disturbance guaranteed by Heisenberg's uncertainty principle becomes negligible. Its discovery opened the door for investigation of all manner of quantum phenomena previously deemed inaccessible.. Furthermore it has now been shown to have promise as a powerful practical tool for making ultra-precise measurements. Unfortunately not many analytical results are known on the statistics of weak values. I have been collaborating with Professor Michael Berry on this topic for last three years and have made many four fundamental contributions (with one applying to famous "neutrino problem".

(3) Low temperature properties of Glasses (with Prof. Leggett):

Experiments over the last thirty years has shown conclusively that the thermal, acoustic and dielectric properties of virtually all amorphous materials are not only qualitatively different from those of crystals, but show a truly amazing degree of universality, both qualitative as well as quantitative yet not fully understood. The universality strongly suggests a possibility of a common, system-independent theoretical formulation for their physical properties. With an objective to search for such a formulation using random matrix approach, I have been collaborating with Professor Antony Leggett for last six years and our work has led to many useful insights in the so called "glass-problem" referred as one of the ten unsolved problems of physics.

(4) Physical curl forces (with Prof. M. Berry)

The curl forces are the position dependent forces whose curl is non-zero. As a consequence, there is no associated scalar potential and therefore no obvious Hamiltonian or Lagrangean, and, except in special cases, no obvious conserved quantities. Nevertheless, the motion is non-dissipative (measure preserving in position and velocity). As an example, we consider the force on a particle with complex polarizability that is not derivable from a potential. We studied it in detail for motion near an anisotropic optical vortex of arbitrary strength. Fundamental questions are raised by the fact that although the curl

force requires complex polarizability, reflecting dissipation in the internal dynamics, the particle motion that it generates in non-dissipative. Our study in last two years has led to three interesting publications; it is still going on.

Some other interesting studies I have done in past are

(4) Study of the stability of Proteins using Random Matrix approach.

(5) Study of slow manifolds and reaction forces **(with Prof. M. Berry)**

(6) Localization of phonons in a disordered medium **(with Prof. R. Stinchcomb),**

(7) Study of transport properties in flat band crystals **(with Prof. J. T. Chalker),**

(8) A single parametric formulation of the level-statistics of disordered systems, with/ without e-e interactions, and, under arbitrary conditions e.g. dimensionality, boundary conditions etc.

(9) A common mathematical formulation of the statistics of eigenvalues and eigenfunctions of complex systems.

(10) Study of the transport properties of multichannel disordered regions, of arbitrary dimensions and under generic scattering conditions.

(11) A search of critical level-statistics in dynamical systems e.g. quantum kicked Rotor.

(12) Study of the level-dynamics of complex systems (conservative as well as dissipative).

(11) Numerical study of effect of weakly broken symmetries on the spectrum and eigenfunctions of Quantum kicked rotors; direct verification of random matrix nature of time-evolution operator, followed by the verification of the existence of Random matrix type intermediate ensembles where the local symmetry breaking parameter, giving rise to smooth transition, matches with the one obtained by our semiclassical theory for transitions in quantum chaotic systems. **(with Prof. A. Pandey)**

(14) The semiclassical study of quantum spectra of classically chaotic and integrable systems using Gutzwiller Trace formula and its application to symmetry admixing transitions in chaotic Quantum maps**. (with Prof. A. Pandey)**

(15) Study of Random Matrix theory of Dyson's circular ensembles and symmetry admixing transitions in various universality classes of circular ensembles. The understanding of the limit up to which Random Matrix theory can successfully model classically chaotic cases**. (with Prof. A. Pandey)**

(14) The study of chaotic wavefunctions and scars,

(16) Study of the asymptotic behavior of Painleve equations by monodromy-deformation methods andits application to asymptotic spacing distribution of the eigenvalues of Random matrix ensembles, **(with Prof. M.L. Mehta)**

(17) The study of eigenvalue correlations of two coupled matrices which has application in many fields e.g. complex systems two dimensional gravity problem**. (with Prof. M.L.Mehta)**

(18) The semiclassical study of the zeros of wavefunctions of quantum chaotic systems; numerical study of the distribution of zeros of wavefunctions of quantum kicked rotor in the phase space, their correlation and random nature as well as their behavior under weak symmetry violations.

(19) The semiclassical study of higher order spectral correlations of quantum chaotic systems.

(20) The semiclassical study of parametric correlations in quantum chaotic systems.

(21) Study of the robustness and validity of universality in generalized Gaussian and non-Gaussian random matrix models of the complex quantum systems.

TEACHING EXPERIENCE

(1) Organization: University Of Illinois At Chicago

Number of Years: 1 Number of Hours per Week: 8

Courses taught*:*

(i) Physics 105 (Theory) , (ii) Physics 106 (Lab),

Summer and Autumn 2003 and Spring 2004.

Organization: IIT Kharagpur

Number of Years : 12 Number of Hours per Week: 6-9

Courses taught:

(i) Physics I: Waves & Oscillations, B.Tech (1st Year), Spring, 1999, 2000.

(ii) Electrodynamics: M.Sc (2nd Year), Spring 2005-06, 2010.

(iii) Fluid Dynamics: M.Sc (2nd Year), Spring 2011213.

(iv) Quantum Mechanics: M.Sc (3rd Year), Autumn, 2004-05, Spring 2007-2011

(v) Statistical Phsyics (II): M.Sc (4^{th} Year) Autumn 2012

(vi) Electronic Theory of Solids: M.Sc (5th Year), Autumn, 1999, 2001.

(vii) Mesoscopic Physics: M.Sc (5^{th} Year), Autumn 2008, 2009

(viii) Random Matrix Theory and Applications (Ph.D Course), Autumn 2012

(ix) Introductory Physics: B.Tech Preparatory Class, Spring 2001-03, 1998.

(x) Physics Tutorials: B.Tech (1^{st} Year), Spring 1999, 2002

(xi) Physics Laboratory Courses:

(a) B.Tech (1st and 2nd Year), Autumn, Spring 1999, 2000, 2005-0
(b) M.Sc (3rd Year), Spring 2001-2002, 2004,2007-08, 2010,-2012
(c) M.Sc (4th Year), Autumn 1998

CONTRIBUTIONS IN VARIOUS INTERNATIONAL CONFERENCES

July 2016
An invited talk on “Universality in Complexity: a random matrix view-point” in International conference “RandomMatrix EurAsia-2016”, University of Macau, China.

July 2012
An invited talk on “Weak Measurements: Typical weak and superweak Values” in Institute of Quantum Computing, Waterloo, Canada

April 2011:
An invited talk on “universality in complexity:…”, under “Random Interactions Seminars” department of theoretical Physics, Tata Institute of Fundamental research, Bombay.

Jan 2011:
An Invited talk on “ typical weak and superweak values” in National Conference on Nonlinear Systems and Dynamics (NCNSD-2011), Bharathidasan University, Tiruchirapalli, Tamilnadu, India

July 2010
A contributed talk on “Quantum Phase transition in Kicked Rotor…” In “Dynamics Days 2010 (DDAP6)”, (12^{th} -14^{th} July), Sydney, Australia.

An invited talk on “Quantum Phase transition in Kicked Rotor…” in “Quantum chaos and quantum information” workshop (21^{st}-24^{th} July) held in IIT Madras, India.

Jan 2009
An invited talk on “*non-Hermiticity and universality*” in Homi Bhabha Centenary Conference on Non-Hermitian Hamiltonians in Quantum Physics (PHHQP VIII), held at Bhabha atomic research centre, Bombay, India.

July 2007:
A contributed talk on "*Eigenfunction Statistics of Complex Systems: A Common Mathematical Formulation*” in “Quantum Theory and Symmetries (QTS5)” held in Valladolid, Spain.

March 2006:
A contributed talk on "*Multi-Channel Transport through disordered Media....*" in “DPG+ European Physical Science Conference in Dresden Germany.

July 2005:
A contributed talk on "*Statistical Studies of Complex Systems*" in the European Physical Science Conference “EPS13:Beyond Einstein..” in Bern Switzerland.

May 2004:
A contributed talk on "*Level Statistics of Complex Systems*" in the International Conference on Complex Systems, 2004, Boston, USA.

July 2002:

A poster on "*Level Statistics of Complex Systems*" in the International Conference on Theoretical Physics,2002, Paris, France.

November 2001:
Two contributed talks on (i) "*Level Statistics of Complex Systems: ARandom matrix Approach*" (ii) "*Application or Random Matrix Theory in Physical Systems*" in the APCTP International symposium on "Slow Dynamical Processes in Nature" held in Seoul, Korea.

June 2001:
A poster on "*Level Statistics for Metal-Insulator Transition*"
in the International conference "Dynamics Days: Europe 2001"
organized by Max Planck Institute for Complex Systems, Dresden, Germany.

July 2000:
A contributed talk on "*Level Statistics of Complex Systems*" and a
poster on "*A novel technique for complex spectra analysis*" in
the International Congress on Mathematical Physics
"ICMP 2000" held in Imperial College, London, U.K.

July 2000:
A contributed talk on "*A novel technique for complex spectra analysis*" In the International workshop on "Disordered and Complex Systems" held
in King's College, London, UK.

July 1999:
A contributed talk on "*Eigenvalue Correlations in Generalized Gaussian Ensembles*" in the International conference "Dynamics Days" organized
by Hongkong Baptist University, Hongkong, China.

May 1999:
An Invited talk on "*Level Correlations in Banded Matrices*" in
International workshop on Complex Systems" held in Max Planck
Institute for Physics of Complex Systems, Dresden, Germany.

August 1998:
Presented my work on "*Universal Level Dynamics of Complex Systems*" in the International Adriatico research workshop on "Disordered Systems....." organized by International Centre for Theoretical Physics (ICTP), Trieste, Italy.

July 1998:
Presented a poster on "*Universal Level Dynamics of Complex Systems*" in the "STATPHYS 20", "IUPAP" meet held in Paris.

July 1998:
Presented a poster on "Universal *Level Dynamics of Complex Systems*" in the satellite meeting "Application of Field Theory...."
to IUPAP held in Bonn, Germany and organized by University of Essen, Germany.

January 1998:
Presented some of my works in various Indian Institutes as part of "Theoretical Physics Seminar Circuit" Program in India.

November 1997:
An invited talk on "Universal *Level Dynamics of Complex Systems*" in

conference on "Nonlinear Dynamics and Computational Physics" organized by Physical Research Laboratory, Ahmedabad, India.

January 1996:
Presented my work on "*The Spectral and Strength Fluctuations in Quantum Chaos and RMT*" in the "Chaos and Quantization" Semester in Paris co-organized by Service de Physique du Centre Emile Borel, Institut Henri Poincare, Paris.

June 1996:
Presented my work on "*Parametric Correlations in Quantum Chaotic Spectra*" in the "Discussion Meeting on Structure Dynamics. ....." organized by JNCASR, Bangalore, India.

June 1994:
Presented a poster on "*Symmetry Breaking in Quantum Chaotic System*" in international workshop on "Application....." organized by Institute of Nuclear Theory, University of Washington, Seattle.

February 1994:
Presented a poster on "*Symmetry Breaking in Quantum Chaotic System*" in international conference on "Meso....." organized by Dipartimento di Fisica, Universita di Roma, La Sapienza, Roma, Italy

Referees

(i) Prof. Michael Berry
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(ii) Prof. A. J. Leggett,
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(iii) Prof. Deepak Dhar
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(iv) John Chalker
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(v) Prof. J.P.Keating,
Department of Mathematics,
University of Bristol, University Walk, Clifton, Bristol, BS8 1TW, U.K.
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(vi) Prof. N. Kumar,
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(vii) Prof. T.V. Ramkrishnan,
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