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Title	PROF.	First Name	DAYA SHANKAR	Last Name	KULSHRESHTHA	Photograph
Designation		PROFESSOR OF PHYSICS				
Department		DEPARTMENT OF PHYSICS & ASTROPHYSICS				
Address (Campus) (Residence)		UNIVERSITY OF DELHI (NORTH CAMPUS), DELHI-110007				
		C-7A, VIJAY NAGAR, DELHI-110009				
Phone No (Campus) (Residence)optional		+91-11-27.66.71.55. +91-11-27.66.77.93, +91-27.66.67.96				
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Fax		+91-011-27.66.70.61				
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Web-Page		https://sites.google.com/site/dskulsh/				
Education						
Subject	Institution	Year	Details			
Ph.D.	Delhi University	1979	Thesis topic: "Heavy Meson Spectroscopy in a Quark-Confining Two-Step Potential Model", under the supervision of Prof. Dr. R. P. Saxena			
M. Sc.	Jiwaji University	1971	Subjects: Physics (Topper of the University)			
B. Sc.	Jiwaji University	1969	Subjects: Physics, Chemistry & Mathematics (Topper of the University)			
Career Profile						
Organisation / Institution		Designation	Duration	Role		
Rajdhani College, University of Delhi, New Delhi-110015		Lecturer in Physics	1977--1994	Teaching & Research		
Department of Physics, University of Kaiserslautern, Kaiserslautern, Germany		DAAD Post-Doctoral Fellow	1982--1984	Research		

Department of Physics and Astrophysics, University of Delhi, Delhi-110007	UGC-Research Scientist (B) (in Reader's Grade)	1986--1991	Research & Teaching
Department of Physics, University of Kaiserslautern, Kaiserslautern, Germany	Wissenschaftlicher Mitarbeiter (BAT-IIA) and Wissenschaftliche Assistent (C1)	1990--1994	Teaching & Research
Department of Physics & Astrophysics, University of Delhi, Delhi - 110007	Professor (Present Affiliation)	1994--present	Teaching & Research
Department of Physics & Astrophysics, University of Delhi, Delhi - 110007	Professor & Head	2007--2010	Teaching, Research & Administration
Department of Physics & Astrophysics, University of Delhi, Delhi - 110007	Professor (Present Affiliation)	1994--present	Teaching & Research

Research Interests / Specialization

Theoretical High Energy Physics : Quantum Field Theory and Mathematical Physics, Quantum Electrodynamics, Quantum Chromodynamics and Gauge Field Theories, String Theories, Gravity Theories and D-brane Actions, Constrained Dynamics and Light-Cone Physics, Instant-Form and Light-Front Quantization using Hamiltonian, Path Integral and BRST Formulations. Research interests include instant-form (IF) quantization (IFQ) and light-front (LF) quantization (LFQ) of constrained dynamical systems. Study of canonical structure, constrained dynamics, operator solutions and Hamiltonian, path Integral and BRST quantization of field theories, string theories and D-brane actions using the Dirac's relativistic IF and LF dynamics and construction and quantization of gauge-invariant models. Studies include IFQ and LFQ of several field theory models and D-brane actions, (like the Polyakov action, Nambu-Goto, Born-Infeld-Nambu-Goto and Dirac-Born-Infeld-Nambu-Goto actions) in the presence of background fields like the constant scalar axion field, U(1) gauge field and the antisymmetric 2-form gauge field, under appropriate gauge-fixing conditions.

Teaching Experience (Subjects/Courses Taught)

Present teaching of Post Graduate Courses at the Department of Physics and Astrophysics, Delhi

University (1994-till date) involves taking the Theory Lecture Courses and Tutorials on Classical Mechanics, Quantum Mechanics-I, Quantum Mechanics-II, Electrodynamics, Statistical Mechanics, Radiation Theory, Quantum Field Theory – I, Quantum Field Theory - II, Particle Physics – I and Particle Physics – II.

Prior to this, my teaching of the Diplom Courses at the University of Kaiserslautern, Germany (1990-994) involved taking the Tutorials Classes for the Lecture Courses on Classical Mechanics, Quantum Mechanics-I, Quantum Mechanics-II, Electrodynamics-I, Electrodynamics-II, Mathematics for Beginners.

The teaching of Post Graduate Courses at the Department of Physics and Astrophysics , Delhi University (1986-1989) involved taking Lecture Courses and Tutorials on Classical Mechanics, Quantum Mechanics-I, Quantum Mechanics-II, Electrodynamics, Statistical Mechanics and Radiation Theory.

Teaching of the Under Graduate Courses at Rajdhani College, University of Delhi, (1977-1986) involved the teaching of the following courses:

Mathematical Physics (All Parts) included the topics: Vector Analysis, Orthogonal Curvilinear Coordinates, Multiple Integrals, Calculus of Variations, Differential Equations, Linear Ordinary Differential Equations, Fourier Series and Theory of Errors , Theory of Complex Variables, Special Functions and Partial Differential Equations, Theory of Linear Vector Spaces, Cartesian Tensors and Integral Transforms.

Mechanics: Dynamics of a Particle, Rotational Dynamics, Oscillatory Motion, Gravitation and Central Force Motion, Non-inertial systems and Special Theory of Relativity.

Electricity and Magnetism: Electrical Circuits, Electrical Fields, Electrostatic Energy, Dielectric Properties of Matter, Magnetic Field, Magnetic Properties of Matter and Electromagnetic Induction.

Thermal Physics: Kinetic Theory of Gases and Thermodynamics.

Vibrations and Waves: Vibrations, Wave Optics, Interference, Diffraction and Polarization.

Quantum Mechanics and Nuclear Physics: Particles and Waves, Essentials of Quantum Mechanics (wave function approach) , Elements of Nuclear Physics.

Statistical Physics: Classical Statistics, Classical Theory of Radiation, Quantum Theory of Radiation, Bose-Einstein and Fermi-Dirac Statistics.

Electromagnetic Theory: Maxwell's Equations and Electrodynamics, Maxwell's Equations in

Microscopic Media, Magnetic, Electrical and Dielectric Properties of Matter.

Honors & Awards

Topped Jiwaji University, Gwalior, in B. Sc. as well as in M. Sc. (Physics) (Gold Medalist).

Member of the International Light-Cone Advisory Committee Inc. (ILCAC Inc.):

LINK(<http://www.ilcacinc.org/>) and LINK(<http://www.ilcacinc.org/members.html>)

Publications (LAST FIVE YEARS)

List of Publications (in Peer-Reviewed/Refereed Journals):

1. Usha Kulshreshtha and Daya Shankar Kulshreshtha, 2013, "Instant-Form and Light-Front Hamiltonian and Path Integral Formulations of the Conformally Gauge-Fixed Polyakov D1-Brane Action in the Presence of a Scalar Axion Field and an U(1) Gauge Field", J. Mod. Phys. (Special Issue on HEP, April-2013) Vol. 4, 57-69 (2013). (USA)
2. Usha Kulshreshtha, Daya Shankar Kulshreshtha and James P. Vary, 2013, "Light-Front Hamiltonian, Path Integral and BRST Formulations of the Chern-Simons-Higgs Theory in the Broken Symmetry Phase", J. Mod. Phys. (Special Issue on HEP, April-2013) Vol. 4, 38-48 (2013). (USA)
3. Usha Kulshreshtha, D. S. Kulshreshtha and J. P. Vary, "Light-Front Hamiltonian and Path Integral Formulations of Large N Scalar QCD₂", Physics Letters B 708 (No. 1-2), (2012) 195–198. (Netherlands)
4. Usha Kulshreshtha and D. S. Kulshreshtha, "String gauge symmetries in the conformally gauge-fixed Polyakov D1 brane action in the presence of background gauge fields", J. Mod. Phys. Vol. 3 (No. 1), (2012) 110-115. (USA)
5. U. Kulshreshtha and D. S. Kulshreshtha, 2011, "Light-Front Hamiltonian and path integral formulations of the conformally gauge-fixed Polyakov D1 brane action in the presence of a scalar dilaton field", J. Mod. Physics, Vol. 2 (No. 8) (2011) 826-833. (USA)
6. U. Kulshreshtha and D. S. Kulshreshtha, 2011, "Light-Front Hamiltonian and path integral quantization of the conformally gauge-fixed Polyakov D1 brane action", J. Mod. Phys. Vol.2,

(No.5, June 2011), 335-340.

7. U. Kulshreshtha, D. S. Kulshreshtha, and J. P. Vary, 2010, "Light-Front Hamiltonian, path integral and BRST formulations of the Chern-Simons theory under appropriate gauge-fixing", J. Mod. Phys. Vol. 1 (No. 6) (2010) 385-392. (USA)

8. U. Kulshreshtha, D. S. Kulshreshtha, and J. P. Vary, 2010, "Light-Front Hamiltonian, path integral and BRST formulations of the Chern-Simons-Higgs theory under appropriate gauge-fixing", Physica Scripta 82: 055101 (Sweden).

9. U. Kulshreshtha, D. S. Kulshreshtha, H. J. W. Mueller-Kirsten and J. P. Vary, 2009, "Hamiltonian, path integral and BRST formulations of the Chern-Simons-Higgs theory under appropriate gauge-fixing", Physica Scripta 79: 045001 (Sweden).

10. U. Kulshreshtha and D. S. Kulshreshtha, 2009, "Hamiltonian and path integral quantization of the conformally gauge-fixed Polyakov D1 brane action in the presence of a scalar dilaton field", Int. J. Theor. Phys. 48, 937-944 (USA).

Books / Monographs/Chapter in a book

<u>Year of Publication</u>	<u>Title</u>	<u>Publisher</u>	<u>Co-Author</u>
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In Indexed/ Peer-Reviewed Journals

<u>Year of Publication</u>	<u>Title</u>	<u>Journal</u>	<u>Co-Author</u>
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2008	Hamiltonian, path integral and BRST formulations of the Chern-Simons theory under appropriate gauge-fixing conditions	Canadian J. Physics 86, 401-407	Usha Kulshreshtha
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2009	Hamiltonian and path integral quantization of the conformally gauge-fixed Polyakov D1 brane action in the presence of a scalar dilaton field.	Int. J. Theor. Phys. 48 : 937-944	Usha Kulshreshtha
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2009	Hamiltonian, path integral and BRST formulations of the Chern-Simons-Higgs theory under appropriate gauge fixing.	Physica Scripta 79 : 045001	Usha Kulshreshtha
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2010	Light-Front Hamiltonian, Path Integral and BRST Formulations of the Chern-Simons Theory Under Appropriate Gauge-Fixing.	J. Mod. Phys. Vol. 1 (No. 6), 385-392	Usha Kulshreshtha and J. P. Vary
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2010	Light-Front Hamiltonian, Path Integral and BRST Formulations of the Chern-Simons-Higgs Theory Under Appropriate Gauge-	Physica Scripta 82 : 055101	Usha Kulshreshtha and
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Fixing.		J. P. Vary	
2011	Light-Front Hamiltonian and Path Integral Quantization of the Conformally Gauge-Fixed Polyakov D1 Brane Action.	J. Mod. Phys. Vol. 2 (No. 5 June), 335-340	Usha Kulshreshtha
2011	Light-Front Hamiltonian and Path Integral Quantization of the Conformally Gauge-Fixed Polyakov D1 Brane Action.	J. Mod. Phys. Vol. 2 (No. 8, August) 826-833	Usha Kulshreshtha
2012	String gauge symmetries in the conformally gauge-fixed Polyakov D1 brane action in the presence of background gauge fields.	J. Mod. Phys. Vol. 3 (No.1), 110-115	Usha Kulshreshtha
2012	Light-Front Hamiltonian and Path Integral Formulations of Large N Scalar QCD ₂ .	Physics Letters B 708 (No.1-2), 195-198	Usha Kulshreshtha and J. P. Vary
2013	Instant-Form and Light-Front Hamiltonian and Path Integral Formulations of the Conformally Gauge-Fixed Polyakov D1-Brane Action in the Presence of a Scalar Axion Field and an U(1) Gauge Field	J. Mod. Phys. (Special Issue on HEP, April-2013) Vol. 4, 57-69 (2013). (USA)	Usha Kulshreshtha and Daya Shankar Kulshreshtha, 2013
2013	Light-Front Hamiltonian, Path Integral and BRST Formulations of the Chern-Simons-Higgs Theory in the Broken Symmetry Phase	J. Mod. Phys. (Special Issue on HEP, April-2013) Vol. 4, 38-48 (2013). (USA)	Usha Kulshreshtha, Daya Shankar Kulshreshtha and James P. Vary, 2013

Articles

Conference Presentations

Invited Talks at the International Conferences in the last 5 Years:

1. D. S. Kulshreshtha, 2013, "LFQ of Large N Scalar QCD₂ with a Higgs Potential", Invited Talk at the International Conference on Nuclear Theory in the Supercomputing Era – 2013 (NTSE-2-13), held at the Iowa State University, Ames, Iowa, USA, May 13-17 (2013), to be Published in the Conference Proceedings (NTSE-2013).

2. D.S. Kulshreshtha, 2011, "Light-Front Quantization of the Conformally Gauge-Fixed Polyakov D1 Brane Action in Presence of Scalar Axion Field and U(1) Gauge Field", "Invited Talk" at the International Conference On "Light Cone 2011: Application of Light-Cone Coordinates to Highly Relativistic Systems (LC2011)", Southern Methodist University, Dallas, USA, May 23-27, 2011 (Published in Few Body Systems, Vol. 52 (2012) pp. 463-467).

3. D.S. Kulshreshtha, 2010, "String Gauge Symmetries in the Light-Front Polyakov D1 Brane Action", "Invited Talk" at the International Workshop On "Light Cone 2010: Relativistic Hadronic and Particle Physics (LC2010)", Valencia, Spain, June 14-18, 2010 (Published in PoS LC2010: 006, 2010, Proceedings of Science, SISSA, Italy).

4. D.S. Kulshreshtha, 2008, "Polyakov D1 Brane Action On the Light-Front", "Invited Talk" at the International Conference On "Light Cone 2008: Relativistic Nuclear and Particle Physics (LC2008)", Mulhouse, France, July 07-11, 2008 (Published in PoS LC2008: 008, 2008, Proceedings of Science, SISSA, Italy) (arXiv:0809.1038 [hep-th]).

Total Publication Profile optional

Total Publication Profile (in Refereed / Peer-Reviewed Journals):

1. Usha Kulshreshtha and Daya Shankar Kulshreshtha, 2013, "Instant-Form and Light-Front Hamiltonian and Path Integral Formulations of the Conformally Gauge-Fixed Polyakov D1-Brane Action in the Presence of a Scalar Axion Field and an U(1) Gauge Field", J. Mod. Phys. (Special Issue on HEP, April-2013) Vol. 4, 57-69 (2013). (USA)

2. Usha Kulshreshtha, Daya Shankar Kulshreshtha and James P. Vary, 2013, "Light-Front Hamiltonian, Path Integral and BRST Formulations of the Chern-Simons-Higgs Theory in the Broken Symmetry Phase", J. Mod. Phys. (Special Issue on HEP, April-2013) Vol. 4, 38-48 (2013). (USA)

3. Usha Kulshreshtha, D. S. Kulshreshtha and J. P. Vary, "Light-Front Hamiltonian and Path Integral Formulations of Large N Scalar QCD₂", Physics Letters B 708 (No. 1-2), (2012) 195–198. (The Neatherlands)

4. Usha Kulshreshtha and D. S. Kulshreshtha, "String gauge symmetries in the conformally gauge-fixed Polyakov D1 brane action in the presence of background gauge fields", J. Mod. Phys. Vol. 3 (No. 1), (2012) 110-115. (USA)

5. U. Kulshreshtha and D. S. Kulshreshtha, 2011, "Light-Front Hamiltonian and path integral formulations of the conformally gauge-fixed Polyakov D1 brane action in the presence of a scalar dilaton field", J. Mod. Physics, Vol. 2 (No. 8) (2011)826-833. (USA)

6. U. Kulshreshtha and D. S. Kulshreshtha, 2011, "Light-Front Hamiltonian and path integral quantization of the conformally guage-fixed Polyakov D1 brane action", J. Mod. Phys. Vol.2, (No.5, June 2011), 335-340. (USA)

7. U. Kulshreshtha, D. S. Kulshreshtha, and J. P. Vary, 2010, "Light-Front Hamiltonian, path integral and BRST formulations of the Chern-Simons theory under appropriate gauge-fixing",

J. Mod. Phys. Vol.1. Issue 6. 85 - 392. (USA)

8. U. Kulshreshtha, D. S. Kulshreshtha, and J. P. Vary, 2010, "Light-Front Hamiltonian, path integral and BRST formulations of the Chern-Simons-Higgs theory under appropriate gauge-fixing", *Physica Scripta* 82: 055101 (Sweden).
9. U. Kulshreshtha, D. S. Kulshreshtha, H. J. W. Müller-Kirsten and J. P. Vary, 2009, "Hamiltonian, path integral and BRST formulations of the Chern-Simons-Higgs theory under appropriate gauge-fixing", *Physica Scripta* 79: 045001 (Sweden).
10. U. Kulshreshtha and D. S. Kulshreshtha, 2009, "Hamiltonian and path integral quantization of the conformally gauge-fixed Polyakov D1 brane action in the presence of a scalar dilaton field", *Int. J. Theor. Phys.* 48, 937-944 (USA).
11. U. Kulshreshtha and D. S. Kulshreshtha, 2008, "Hamiltonian, path integral and BRST formulations of the Chern-Simons theory under appropriate gauge-fixing", *Canadian J. Phys.* 86, 401-407 (Canada).
12. U. Kulshreshtha and D. S. Kulshreshtha, 2007, "Gauge-invariant reformulation of the vector Schwinger model with a photon mass term and its Hamiltonian, path integral and BRST formulations", *Int. J. Mod. Phys. A* 22, 6183-6201 (Singapore).
13. U. Kulshreshtha and D. S. Kulshreshtha, 2005, "Hamiltonian and path integral formulations of the Born-Infeld Nambu-Goto D1-brane action with and without a dilation field under gauge-fixing", *Int. J. Theor. Phys.* 44, 587 (USA).
14. U. Kulshreshtha and D. S. Kulshreshtha, 2004, "Hamiltonian and path integral formulations of the Nambu-Goto D1-brane action with and without a dilaton field under gauge-fixing", *Int. J. Theor. Phys.* 43, 2355 (USA).
15. U. Kulshreshtha and D. S. Kulshreshtha, 2004, "Instant-form Hamiltonian and Becchi-Rouet-Stora-Tyutin formulations of the Nielsen-Olesen model in the broken symmetry phase", *Can. J. Phys.* 82, 843 (USA).
16. U. Kulshreshtha and D. S. Kulshreshtha, 2004, "The front-form Hamiltonian and BRST formulations Of the Nielsen-Olesen model in the broken symmetry phase", *Can. J. Phys.* 82, 569 (USA).
17. U. Kulshreshtha and D. S. Kulshreshtha, 2003, "Hamiltonian and path integral formulations of the Dirac-Born-Infeld-Nambu-Goto D1 brane action with and without a dilation field under gauge-fixing", *Eur. Phys. J. C* 29, 453 (Europe).
18. U. Kulshreshtha and D. S. Kulshreshtha, 2003, "Conformally gauge-fixed Polyakov D1-brane action in the presence of a 2-form gauge field: the instant-form and front-form

Hamiltonian and path integral formulations”, Phys. Lett. B555, 255 (Netherlands).

19. U. Kulshreshtha and D. S. Kulshreshtha, 2002, “Front-form Hamiltonian, path integral, and BRST formulations of the Siegel action”, Int. J. Theor. Phys. 41, 2395 (USA).

20. U. Kulshreshtha and D. S. Kulshreshtha, 2002, “Front-form Hamiltonian, path integral, and BRST formulations of the nonlinear sigma model”, Int. J. Theor. Phys. 41, 1941 (USA).

21. U. Kulshreshtha and D. S. Kulshreshtha, 2002, “The front-form Hamiltonian and BRST formulations of the Jackiw-Rajaraman chiral Schwinger model”, Can. J. Phys. 80, 791 (Canada).

22. U. Kulshreshtha and D. S. Kulshreshtha, 2002, “Light-front Hamiltonian and BRST formulations of a two-dimensional Abelian Higgs model in the broken symmetry phase”, Int. J. Theor. Phys. 41, 251 (USA).

23. U. Kulshreshtha, D. S. Kulshreshtha and H. J. W. Muller-Kirsten, 1999, “BRST quantization of the Siegel action”, Int. J. Theor. Phys. 38, 1399 (USA).

24. U. Kulshreshtha and D. S. Kulshreshtha, 1998, “Front-form Hamiltonian and BRST formulations of the Schwinger model”, Int. J. Theor. Phys. 37, 2539 (USA).

25. U. Kulshreshtha, D. S. Kulshreshtha and H. J. W. Mueller-Kirsten, 1995, “BRST formulation of the Christ-Lee model”, Can. J. Phys. 73, 386 (Canada).

26. U. Kulshreshtha, D. S. Kulshreshtha and H. J. W. Mueller-Kirsten, 1994, “Hamiltonian and BRST formulations of a gauge-invariant chiral Schwinger model”, Can. J. Phys. 72, 639 (Canada).

27. U. Kulshreshtha, D. S. Kulshreshtha and H. J. W. Mueller-Kirsten, 1994, “BRST formulation of a gauge-invariant chiral Schwinger model”, Nuovo Cim. A107, 569 (Italy).

28. U. Kulshreshtha, D. S. Kulshreshtha and H. J. W. Mueller-Kirsten, 1994, “The gauge-invariant, gauged Floreanini-Jackiw action: Stuckelberg term, Hamiltonian and BRST formulations”, Zeit. Phys. C64, 169 (Germany).

29. U. Kulshreshtha, D. S. Kulshreshtha and H. J. W. Mueller-Kirsten, 1993, “Gauge-invariant O(N) nonlinear sigma model(s) and gauge-invariant Klein-Gordon theory: Wess-Zumino terms and Hamiltonian and BRST formulations”, Helv. Phys. Acta 66, 752 (Switzerland).

30. U. Kulshreshtha, D. S. Kulshreshtha and H. J. W. Mueller-Kirsten, 1993, “Hamiltonian and BRST formulations of the Schwinger model”, Helv. Phys. Acta 66, 743 (Switzerland).

31. U. Kulshreshtha, D. S. Kulshreshtha and H. J. W. Mueller-Kirsten, 1993, “A gauge-

invariant theory of chiral bosons: Wess-Zumino term, Hamiltonian and BRST formulations”, Zeit. Phys. C60, 427 (Germany).

32. U. Kulshreshtha, D. S. Kulshreshtha and H. J. W. Mueller-Kirsten, 1993, “Hamiltonian formulation of the Siegel action in various gauges”, Phys. Rev. D47, 4634 (USA).

33. D. S. Kulshreshtha, J. Q. Liang and H. J. W. Muller-Kirsten, 1993, “Fluctuation equations about classical field configurations and supersymmetric quantum mechanics”, Annals Phys. 225, 191 (USA).

34. D. S. Kulshreshtha and H. J. W. Muller-Kirsten, 1992, “Faddeev-Jackiw quantization of selfdual fields”, Phys. Rev. D45, 393 (USA).

35. S. Bhatnagar, D. S. Kulshreshtha and A. N. Mitra, 1991, “How big are the decay constants $f(p)$ of heavy-light mesons?”, Phys. Lett. B263, 485 (USA).

36. D. S. Kulshreshtha and H. J. W. Muller-Kirsten, 1991, “Quantization of systems with constraints: the Faddeev-Jackiw method versus Dirac’s method applied to superfields”, Phys. Rev. D43, 3376 (USA).

37. J. Q. Liang and D. S. Kulshreshtha, 1990, “A charged particle in the magnetic field Of a Dirac monopole line”, , Phys. Lett. A149, 1 (Neatherland).

38. D. S. Kulshreshtha, 1988, “The spectrum of b anti-c, t anti-c and t anti-b bound states in the two-step potential model”, Nuovo Cim. A99, 725 (Italy).

39. D. S. Kulshreshtha and A. N. Mitra, 1988, 1988, “Null plane formulation of Bethe-Salpeter $q q q$ dynamics: baryon mass spectra”, Phys. Rev. D37, 1268 (USA) [Erratum-Phys. Rev. D 38, 2913 (USA)].

40. D. S. Kulshreshtha, 1985, “The fine and hyperfine structure and dipole transitions of charmonium and bottomonium in the two-step potential model”, Nuovo Cim. A87, 25 (1985).

41. D. S. Kulshreshtha, 1985, “c anti-c and b anti-b spectroscopy in the two-step potential model”, Nuovo Cim. Lett. 42, 199 (Italy).

42. D. S. Kulshreshtha and A. N. Mitra, 1983, “Bethe-Salpeter basis for quark pair creation model: understanding of $V P P$, $V P \gamma$ and $P \gamma \gamma$ couplings”, Phys. Rev. D28, 588 (USA).

43. D. S. Kulshreshtha, 1983, “Anticipated t anti- t states in the quark-confining two-step

potential model”, Nuovo Cim. A74, 258-266 (Italy).

44. D. S. Kulshreshtha, 1983, “The form-factors of π and K mesons at large momentum transfer squared”, Lett. Nuovo Cim. Lett. 37, 275-278 (Italy).

45. D. S. Kulshreshtha, 1983, “Glueballs in the two-step potential model”, Nuovo Cim. Lett. 36, 619 (Italy).

46. D. S. Kulshreshtha and R. S. Kaushal, 1982, “Beauty mesons in the two-step potential model”, Nuovo Cim. Lett. 35, 323 (Italy).

47. D. S. Kulshreshtha, A. N. Mitra and I. Santhanam, 1982, “Strange baryon spectroscopy through Bethe-Salpeter approach under harmonic confinement”, Phys. Rev. D26, 3131 (USA).

48. D. S. Kulshreshtha and A. N. Mitra, 1982, “Bethe-Salpeter Q anti-Q dynamics under harmonic confinement”, Phys. Rev. D26, 3123 (USA).

49. D. S. Kulshreshtha and R. S. Kaushal, 1982, “Heavy mesons in a simple quark confining two-step potential model”, Phys. Rev. D26, 2331 (USA).

50. D. S. Kulshreshtha, A. N. Mitra and I. Santhanam, 1982, “Bethe-Salpeter treatment of Λ , Σ resonances under harmonic confinement”, Nuovo Cim. Lett. 34, 220 (Italy).

51. D. S. Kulshreshtha and R. S. Kaushal, 1981, “The form-factor of the K meson and the meson radii in a quark confining two-step potential model”, Phys. Lett. B102, 185 (Netherlands).

52. R. S. Kaushal and D. S. Kulshreshtha, 1977, “Quark confinement potential and the quark-diquark model for nucleons”, Annals Phys. 108, 198 (USA).

53. R. S. Kaushal and D. S. Kulshreshtha, 1977, “Charmed mesons in the two-step potential model”, Nuovo Cim. A40, 163 (Italy).

54. R. S. Kaushal, D. S. Kulshreshtha and D. Parashar, 1977, “Quark confinement potential and meson resonances”, Nuovo Cim. A37, 55 (Italy).

55. D. S. Kulshreshtha, 1984, “On the 13 PJ (1 triplet P wave) splittings of bottomonium”, Nucl. Phys. A416, 599-600 (Netherlands).

56. D. S. Kulshreshtha, 1984, “E1 and M1 transitions of bottomonium, Nucl. Phys. A416, 601-602 (Netherlands).

Books/Chapters in a Book

Article/Chapter in a Book:

1. D. S. Kulshreshtha, "Gauge Symmetry in Chiral Electrodynamics", - A Chapter in the Book: "Quantum Field Theory", Published by Indian National Science Academy, Edited by A.N. Mitra, pp. 479-489, (2000) (India).

In Indexed/ Peer Reviewed Journals

Total of 56 publications in peer-reviewed journals. Complete list of publications is available at the SLAC-SPIRES web site:

<http://www.slac.stanford.edu/spires/find/hep/www?AUTHOR=D.S.Kulshreshtha>

List of Publications (in Indexed/ Peer-Reviewed Journals):

1. Usha Kulshreshtha and Daya Shankar Kulshreshtha, 2013, "Instant-Form and Light-Front Hamiltonian and Path Integral Formulations of the Conformally Gauge-Fixed Polyakov D1-Brane Action in the Presence of a Scalar Axion Field and an U(1) Gauge Field", J. Mod. Phys. (Special Issue on HEP, April-2013) Vol. 4, 57-69 (2013). (USA)
2. Usha Kulshreshtha, Daya Shankar Kulshreshtha and James P. Vary, 2013, "Light-Front Hamiltonian, Path Integral and BRST Formulations of the Chern-Simons-Higgs Theory in the Broken Symmetry Phase", J. Mod. Phys. (Special Issue on HEP, April-2013) Vol. 4, 38-48 (2013). (USA)
3. Usha Kulshreshtha, D. S. Kulshreshtha and J. P. Vary, "Light-Front Hamiltonian and Path Integral Formulations of Large N Scalar QCD_{2}", Physics Letters B 708 (No. 1-2), (2012) 195–198.
4. Usha Kulshreshtha and D. S. Kulshreshtha, "String gauge symmetries in the conformally gauge-fixed Polyakov D1 brane action in the presence of background gauge fields", J. Mod. Phys. Vol. 3 (No. 1), (2012) 110-115.
5. U. Kulshreshtha and D. S. Kulshreshtha, 2011, "Light-Front Hamiltonian and path integral formulations of the conformally gauge-fixed Polyakov D1 brane action in the presence of a scalar dilaton field", J. Mod. Physics, Vol. 2 (No. 8) (2011) 826-833.

6. U. Kulshreshtha and D. S. Kulshreshtha, 2011, "Light-Front Hamiltonian and path integral quantization of the conformally gauge-fixed Polyakov D1 brane action", J. Mod. Phys. Vol.2, (No.5, June 2011), 335-340.

7. U. Kulshreshtha, D. S. Kulshreshtha, and J. P. Vary, 2010, "Light-Front Hamiltonian, path integral and BRST formulations of the Chern-Simons theory under appropriate gauge-fixing", J. Mod. Phys. Vol.1. Issue 6. 85 - 392.

8. U. Kulshreshtha, D. S. Kulshreshtha, and J. P. Vary, 2010, "Light-Front Hamiltonian, path integral and BRST formulations of the Chern-Simons-Higgs theory under appropriate gauge-fixing", Physica Scripta 82: 055101 (Sweden).

9. U. Kulshreshtha, D. S. Kulshreshtha, H. J. W. M'ller-Kirsten and J. P. Vary, 2009, "Hamiltonian, path integral and BRST formulations of the Chern-Simons-Higgs theory under appropriate gauge-fixing", Physica Scripta 79: 045001 (Sweden).

10. U. Kulshreshtha and D. S. Kulshreshtha, 2009, "Hamiltonian and path integral quantization of the conformally gauge-fixed Polyakov D1 brane action in the presence of a scalar dilaton field", Int. J. Theor. Phys. 48, 937-944 (USA).

11. U. Kulshreshtha and D. S. Kulshreshtha, 2008, "Hamiltonian, path integral and BRST formulations of the Chern-Simons theory under appropriate gauge-fixing", Canadian J. Phys. 86, 401-407 (Canada).

12. U. Kulshreshtha and D. S. Kulshreshtha, 2007, "Gauge-invariant reformulation of the vector Schwinger model with a photon mass term and its Hamiltonian, path integral and BRST formulations", Int. J. Mod. Phys. A22, 6183-6201 (Singapore).

13. U. Kulshreshtha and D. S. Kulshreshtha, 2005, "Hamiltonian and path integral formulations of the Born-Infeld Nambu-Goto D1-brane action with and without a dilaton field under gauge-fixing", Int. J. Theor. Phys. 44, 587 (USA).

14. U. Kulshreshtha and D. S. Kulshreshtha, 2004, "Hamiltonian and path integral formulations of the Nambu-Goto D1-brane action with and without a dilaton field under gauge-fixing", Int. J. Theor. Phys. 43, 2355 (USA).

15. U. Kulshreshtha and D. S. Kulshreshtha, 2004, "Instant-form Hamiltonian and Becchi-Rouet-Stora-Tyutin formulations of the Nielsen-Olesen model in the broken symmetry phase", *Can. J. Phys.* 82, 843 (USA).
16. U. Kulshreshtha and D. S. Kulshreshtha, 2004, "The front-form Hamiltonian and BRST formulations Of the Nielsen-Olesen model in the broken symmetry phase", *Can. J. Phys.* 82, 569 (USA).
17. U. Kulshreshtha and D. S. Kulshreshtha, 2003, "Hamiltonian and path integral formulations of the Dirac-Born-Infeld-Nambu-Goto D1 brane action with and without a dilation field under gauge-fixing", *Eur. Phys. J. C*29, 453 (Europe).
18. U. Kulshreshtha and D. S. Kulshreshtha, 2003, "Conformally gauge-fixed Polyakov D1-brane action in the presence of a 2-form gauge field: the instant-form and front-form Hamiltonian and path integral formulations", *Phys. Lett.* B555, 255 (Netherlands).
19. U. Kulshreshtha and D. S. Kulshreshtha, 2002, "Front-form Hamiltonian, path integral, and BRST formulations of the Siegel action", *Int. J. Theor. Phys.* 41, 2395 (USA).
20. U. Kulshreshtha and D. S. Kulshreshtha, 2002, "Front-form Hamiltonian, path integral, and BRST formulations of the nonlinear sigma model", *Int. J. Theor. Phys.* 41, 1941 (USA).
21. U. Kulshreshtha and D. S. Kulshreshtha, 2002, "The front-form Hamiltonian and BRST formulations of the Jackiw-Rajaraman chiral Schwinger model", *Can. J. Phys.* 80, 791 (Canada).
22. U. Kulshreshtha and D. S. Kulshreshtha, 2002, "Light-front Hamiltonian and BRST formulations of a two-dimensional Abelian Higgs model in the broken symmetry phase", *Int. J. Theor. Phys.* 41, 251 (USA).
23. U. Kulshreshtha, D. S. Kulshreshtha and H. J. W. Muller-Kirsten, 1999, "BRST quantization of the Siegel action", *Int. J. Theor. Phys.* 38, 1399 (USA).
24. U. Kulshreshtha and D. S. Kulshreshtha, 1998, "Front-form Hamiltonian and BRST formulations of the Schwinger model", *Int. J. Theor. Phys.* 37, 2539 (USA).
25. U. Kulshreshtha, D. S. Kulshreshtha and H. J. W. Mueller-Kirsten, 1995, "BRST formulation of the Christ-Lee model", *Can. J. Phys.* 73, 386 (Canada).

26. U. Kulshreshtha, D. S. Kulshreshtha and H. J. W. Mueller-Kirsten, 1994, "Hamiltonian and BRST formulations of a gauge-invariant chiral Schwinger model", Can. J. Phys. 72, 639 (Canada).
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28. U. Kulshreshtha, D. S. Kulshreshtha and H. J. W. Mueller-Kirsten, 1994, "The gauge-invariant, gauged Floreanini-Jackiw action: Stuckelberg term, Hamiltonian and BRST formulations", Zeit. Phys. C64, 169 (Germany).
29. U. Kulshreshtha, D. S. Kulshreshtha and H. J. W. Mueller-Kirsten, 1993, "Gauge-invariant O(N) nonlinear sigma model(s) and gauge-invariant Klein-Gordon theory: Wess-Zumino terms and Hamiltonian and BRST formulations", Helv. Phys. Acta 66, 752 (Switzerland).
30. U. Kulshreshtha, D. S. Kulshreshtha and H. J. W. Mueller-Kirsten, 1993, "Hamiltonian and BRST formulations of the Schwinger model", Helv. Phys. Acta 66, 743 (Switzerland).
31. U. Kulshreshtha, D. S. Kulshreshtha and H. J. W. Mueller-Kirsten, 1993, "A gauge-invariant theory of chiral bosons: Wess-Zumino term, Hamiltonian and BRST formulations", Zeit. Phys. C60, 427 (Germany).
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33. D. S. Kulshreshtha, J. Q. Liang and H. J. W. Muller-Kirsten, 1993, "Fluctuation equations about classical field configurations and supersymmetric quantum mechanics", Annals Phys. 225, 191 (USA).
34. D. S. Kulshreshtha and H. J. W. Muller-Kirsten, 1992, "Faddeev-Jackiw quantization of selfdual fields", Phys. Rev. D45, 393 (USA).
35. S. Bhatnagar, D. S. Kulshreshtha and A. N. Mitra, 1991, "How big are the decay constants $f(p)$ of heavy-light mesons?", Phys. Lett. B263, 485 (USA).
36. D. S. Kulshreshtha and H. J. W. Muller-Kirsten, 1991, "Quantization of systems with constraints: the Faddeev-Jackiw method versus Dirac's method applied to superfields", Phys. Rev. D43, 3376 (USA).

37. J. Q. Liang and D. S. Kulshreshtha, 1990, "A charged particle in the magnetic field Of a Dirac monopole line", , Phys. Lett. A149, 1 (Neatherland).
38. D. S. Kulshreshtha, 1988, "The spectrum of b anti-c, t anti-c and t anti-b bound states in the two-step potential model", Nuovo Cim. A99, 725 (Italy).
39. D. S. Kulshreshtha and A. N. Mitra, 1988, 1988, "Null plane formulation of Bethe-Salpeter q q dynamics: baryon mass spectra", Phys. Rev. D37, 1268 (USA) [Erratum-Phys. Rev. D 38, 2913 (USA)].
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41. D. S. Kulshreshtha, 1985, "c anti-c and b anti-b spectroscopy in the two-step potential model", Nuovo Cim. Lett. 42, 199 (Italy).
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43. D. S. Kulshreshtha, 1983, "Anticipated t anti- t states in the quark-confining two-step potential model", Nuovo Cim. A74, 258-266 (Italy).
44. D. S. Kulshreshtha, 1983, "The form-factors of π and K mesons at large momentum transfer squared", Lett. Nuovo Cim. Lett. 37, 275-278 (Italy).
45. D. S. Kulshreshtha, 1983, "Glueballs in the two-step potential model", Nuovo Cim. Lett. 36, 619 (Italy).
46. D. S. Kulshreshtha and R. S. Kaushal, 1982, "Beauty mesons in the two-step potential model", Nuovo Cim. Lett. 35, 323 (Italy).
47. D. S. Kulshreshtha, A. N. Mitra and I. Santhanam, 1982, "Strange baryon spectroscopy through Bethe-Salpeter approach under harmonic confinement", Phys. Rev. D26, 3131 (USA).
48. D. S. Kulshreshtha and A. N. Mitra, 1982, "Bethe-Salpeter Q anti-Q dynamics under harmonic confinement", Phys. Rev. D26, 3123 (USA).

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52. R. S. Kaushal and D. S. Kulshreshtha, 1977, "Quark confinement potential and the quark-diquark model for nucleons", Annals Phys. 108, 198 (USA).

53. R. S. Kaushal and D. S. Kulshreshtha, 1977, "Charmed mesons in the two-step potential model", Nuovo Cim. A40, 163 (Italy).

54. R. S. Kaushal, D. S. Kulshreshtha and D. Parashar, 1977, "Quark confinement potential and meson resonances", Nuovo Cim. A37, 55 (Italy).

55. D. S. Kulshreshtha, 1984, "On the 13 PJ (1 triplet P wave) splittings of bottomonium", Nucl. Phys. A416, 599-600 (Netherlands).

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Books/Chapters in a Book

Article/Chapter in a Book:

1. D. S. Kulshreshtha, 2000, "Gauge symmetry in chiral electrodynamics", - A Chapter in the Book: "Quantum Field Theory", Published by Indian National Science Academy, Edited by A.N. Mitra, pp. 479-489, (India).

Articles

Article/Chapter in a Book:

1. D. S. Kulshreshtha, "Gauge symmetry in chiral electrodynamics", - A Chapter in the Book: "Quantum Field Theory", Published by Indian National Science Academy, Edited by A.N. Mitra, pp. 479-489 (2000) (India).

Conference Presentations

List of Publications (Invited-Talks/ Contributed-Papers in Conferences):

1. D. S. Kulshreshtha, 2013, "LFQ of Large N Scalar QCD2 with a Higgs Potential", Invited Talk at the International Conference on Nuclear Theory in the Supercomputing Era – 2013 (NTSE-2-13), held at the Iowa State University, Ames, Iowa, USA, May 13-17 (2013), to be Published in the Conference Proceedings (NTSE-2013).
2. D.S. Kulshreshtha, 2011, "Light-Front Quantization of the Conformally Gauge-Fixed Polyakov D1 Brane Action in Presence of Scalar Axion Field and U(1) Gauge Field", "Invited Talk" at the International Conference On "Light Cone 2011: Application of Light-Cone Coordinates to Highly Relativistic Systems (LC2011)", Southern Methodist University, Dallas, USA, May 23-27, 2011 (Published in Few Body Systems Vol. 52 (2012) pp. 463-467).
3. D.S. Kulshreshtha, 2010, "String Gauge Symmetries in the Light-Front Polyakov D1 Brane Action", "Invited Talk" at the International Workshop On "Light Cone 2010: Relativistic Hadronic and Particle Physics (LC2010)", Valencia, Spain, June 14-18, 2010 (Published in PoS LC2010: 006, 2010, Proceedings of Science, SISSA, Italy).
4. D.S. Kulshreshtha, 2008, "Polyakov D1 Brane Action On the Light-Front", "Invited Talk" at the International Conference On "Light Cone 2008: Relativistic Nuclear and Particle Physics (LC2008)", Mulhouse, France, July 07-11, 2008 (Published in PoS LC2008: 008, 2008, Proceedings of Science, SISSA, Italy) (arXiv:0809.1038 [hep-th]).
5. D.S. Kulshreshtha, 2007, "Light-front quantization of the Polyakov D1 brane action with a scalar dilaton field", "Invited Contributed Talk" at the International Conference on "Relativistic Hadronic and Nuclear Physics-LC2007", held at OCTS, Ohio State University, Columbus, Ohio, USA, May 14-18, 2007 (arXiv:0711.1342 [hep-th]).
6. U. Kulshreshtha and D.S. Kulshreshtha, 2005, "D-brane actions as constrained systems", "Plenary Talk" Presented by DSK at THEP-I held at IIT Roorkee, India, March 16 -20, 2005 (arXiv:0511.058 [hep-th]).
7. D. S. Kulshreshtha and U. Kulshreshtha, 2000, "A 2D light-cone Higgs model in the broken symmetry phase", "Invited Talk" Presented by DSK at the International Light-Cone Conference (LC2000) on "Relativistic Nuclear and Particle Physics", held at Max Planck Institute for Nuclear Physics, Heidelberg, Germany, June 2000, Published in Nucl. Phys. Proc. Suppl. 90, 55

(Netherlands).

8. D. S. Kulshreshtha, 1997, "Stueckelberg term for the chiral Schwinger model with the Faddeevian regularization and the gauge symmetry", "Contributed Paper" Presented at the 2nd Intl. Conf. on Symmetries in Physics, held at University of Seattle, Washington, July, 1997.

9. D. S. Kulshreshtha, 1997, "The Gauge symmetry and BRST symmetry of the gauge-invariant chiral Schwinger model with the Faddeevian regularization", "Contributed Paper", Presented at the 2nd Intl. Conf. on Symmetries in Physics, held at University of Seattle, Washington, July, 1997.

10. U. Kulshreshtha and D. S. Kulshreshtha, 1997, "Generalized Schwinger model in the light-front frame", "Contributed Paper" at the "8th International Workshop on Light-Cone QCD and Nonperturbative Hadronic Physics", held at Lutsen, University of Minnesota, USA, August 11-22, 1997.

11. U. Kulshreshtha and D. S. Kulshreshtha, 1996, "BRST quantization of the light-cone Schwinger model", "Talk" at the "COSEF-JSPS International Workshop in Theoretical Physics", held at the Seoul University, Seoul, South Korea, February 1996.

12. U. Kulshreshtha, D. S. Kulshreshtha and H. J. W. Mueller-Kirsten, 1993, "Hamiltonian and BRST formulations Of some chiral field theories in (1+1)-dimension", "Invited Talk" at the "2nd Workshop on Constraint Theory and Quantization Methods", Montepulciano, Italy, Jun 28 - Jul 1, 1993.

13. S. Bhatnagar, K. K. Gupta, A. N. Mitra and D. S. Kulshreshtha, 1991, "Weak decays of heavy-light mesons in a Bethe-Salpeter formalism", "Contributed Paper" at the "International Conference on Hadron Spectroscopy (HADRON 91)" (Preceded by Summer Course on Hadron Spectroscopy, Aug 5-9), College Park, MD, 12-16 Aug 1991.

14. D. S. Kulshreshtha, 1990, "Hadron Structure in a Bethe-Salpeter Formalism", "Plenary Talk" at the Conference on "Hadron Structure 90", held at Smolenice, Bratislava, Czechoslovakia, October 22-26, 1990.

15. D.S. Kulshreshtha, 1989, "The spin splittings of the c anti-c and b anti-b bound states in the two-step potential model", "Contributed paper" to the XIIth Int. Conference of the Few-Body Problem in physics", held at Vancouver, B.C. Canada, July 2-8, 1989, Proc. page H26, TRI-89-2 (1989), Edited by B.K. Jennings.

16. D.S. Kulshreshtha, 1989, "Electro- and Chromomagnetic Annihilations of the S-State of c anti-c and b anti-b Systems in the two-step potential model", "Contributed paper" to the XIIth Int. Conference of the Few-Body Problem in physics", held at Vancouver, B.C. Canada, July 2-8, 1989, Proc. page H25, TRI-89-2 (1989), Edited by B.K. Jennings.
17. D. S. Kulshreshtha and A. N. Mitra, 1988, "Relativistic quark model", "Talk by DSK", at the XXIIIrd Rencontres de Moriond, Les Arcs, Savoie, France, on "Current Issues in Hadron Physics", March 13-19, 1988, Proc.: Editions Frontieres page 399-404 (1988), Edited by J. Tran Thanh Van.
18. D. S. Kulshreshtha, 1988, "The spin splittings of the c anti-c and b anti-b bound states in the two-step potential model", "Invited Talk" at the Seminar on "Recent trends in nuclear structure physics", held at the IIT-Kanpur, India, October 17-21, 1988.
19. D.S. Kulshreshtha, 1986, "The toponium states in the two-step potential model", D. S. Kulshreshtha, "Contributed Paper" at the XIth Int. Conference on "Few-Body systems in nuclear and particle physics", Tokyo and Sendai, Japan, August 24-30, 1986, page 94-95, Proc.: Edited by T. Sasakawa et al. (1986).
20. D.S. Kulshreshtha, 1986, "The heavier naked beauty and open top states in the two-step potential model", "Contributed Paper" at the XIth Int. Conference on "Few-Body systems in nuclear and particle physics", Tokyo and Sendai, Japan, August 24-30, 1986, page 96-97, Proc.: Edited by T. Sasakawa et al. (1986).
21. D.S. Kulshreshtha, 1985, "Is $\xi(2.22)$ a 1^3F_2 (F wave triplet) state of s anti-s ?", "Contributed Paper" to the "1985 Int. Symposium on Lepton and Photon Interactions at High Energies", Kyoto, Japan, August, 1985.
22. D. S. Kulshreshtha, A. N. Mitra and I. Santhanam, 1981, "A relativistic treatment of ($s = 0, -1$) baryon spectra", "Contributed Paper" at the "IXth international conference on HEP and nucleon structure", SACLAY, Paris, France, July 6-10, 1981.
23. D. S. Kulshreshtha and R. S. Kaushal, 1980, "Quark confinement potential and the quark-diquark model for baryons", "Contributed Paper" Presented by DSK at the "IXth international conference on few-body problem", Eugene Oregon, USA, August 17-23, 1980, Proc.: Vol. I, page 87 (1980).

Public Service / University Service / Consulting Activity

Head of the Department, Department of Physics & Astrophysics, University of Delhi, Delhi, India, for 3 years during the period November 2007 to November 2010.

Professional Societies Memberships

Member of the International Light-Cone Advisory Committee Inc. (ILCAC Inc.):

<http://www.ilcacinc.org/> and <http://www.ilcacinc.org/members.html>

Name appears in the Marquis who's Who in the World: 2012, 2013

Projects (Major Grants / Collaborations)

Research Collaborations:

1. [Dr. Usha Kulshreshtha](#), [Kirori Mal College](#), [University of Delhi](#), India.
2. [Prof. Dr. Harald J. W. Mueller-Kirsten](#), [University of Kaiserslautern](#), Germany.
3. [Prof. Dr. James P. Vary](#), [Iowa State University](#), Iowa, USA.
4. [Prof. Dr. Stanley J. Brodsky](#), [SLAC Theory Division](#), [SLAC](#), [Stanford](#), USA.
5. [Prof. Dr. Jutta Kunz](#), [University of Oldenburg](#), Germany.
6. [Prof. Dr. A. N. Mitra](#), [University of Delhi](#), India.
7. Prof. Lalit K. Sharma, [University of Botswana](#), Botswana
8. Mr. Sanjeev Kumar, [University of Delhi](#), India

Other Details

[Academic Places Visited Abroad \(Visits/Talks/Seminars/Conferences\):](#)

1 University of Oregon, Eugene, USA, Attended the IXth International Conference on Few-Body Problem, August 17-23, 1980.

2 SLAC-Theory Division, Stanford University, California, USA, August 1980.

3 Department of Physics, City College of the City University of New York, September, 1980.

4 ICTP, Trieste, Italy, September 15-November 1, November 30-December 06, 1980.

5 CERN-Theory Division, Geneva, Switzerland, November 22-28, 1980.

6 Division de Physique Theorique, Institute de Physique Nucleaire (IPN), Universite de Paris-Sud, Orsay, Cedex, France, November 2-9, 1980.

7 Department of Theoretical Physics, Royal Institute of Technology, Stockholm, November 13-14, 1980.

8 DESY-Theory Division, Hamburg, Germany, November 1980.

9 Department of Physics, University of Kaiserslautern, Germany, November 20-21, 1980.

10 ICTP Trieste, Italy, Attended Summer Workshop in Particle Physics, June 21- July 31, 1982.

11 CERN-Theory Division, Geneva, Switzerland, one week (July-August) 1982.

12 Goethe Institut, Konstanz, Germany, Studied German Language (Middle Stufe Eines), August-September 1982.

13 Department of Physics, University of Kaiserslautern, Germany, DAAD Post-Doc Fellow, October 1, 1982- December 31, 1984.

14 University of Karlsruhe, Germany, Attended the Xth International Conference on Few-Body Problem in Physics, August 21-27, 1983.

15 MPI for Physics and Astrophysics, Munich, Germany, Attended NATO Advanced Study Institute on "Quarks, Leptons and Beyond", September 5-16, 1983.

16 DESY-Theory Division, Hamburg, Germany, Attended DESY Theory Workshop on "Hadron and Jet Structure", September 27-29, 1983.

17 LPTHE, Universite Paris XI, Centre d'Orsay, Cedex, France, November 7-15, 1983.

18 CERN-Theory Division, Geneva, Switzerland, December 11-24, 1983.

19 ICTP, Trieste, Italy, Attended "Summer Workshop in High Energy Physics and Cosmology", June 17-July 31, 1984.

20 Physikalisches Institut, University of Bonn, Germany, Attended NATO Advanced Study Institute on "Supersymmetry", August 20-31, 1984.

21 DESY-Theory Division, Hamburg, Germany, Attended "DESY Theory Workshop" on "Electroweak Interactions and Particle Structure", September 24-27, 1984.

22 Les Arcs, Savoie, France, Attended "XXIIIrd Rencontres de Moriond" on "Current Issues in Hadron Physics", March 06-13, 1988.

23 Institute des Sciences Nucleaires (ISN), Universite de Grenoble, France, March 21-25, 1988.

24 Division de Physique Theorique, Institute de Physique Nucleaire (IPN), Universite de Paris-Sud, Orsay, Cedex, France, March 28- April 01, 1988.

25 Department of Physics, University of Kaiserslautern, Germany, April 05-29, 1988.

26 Institute of Theoretical Physics, University of Heidelberg, Germany, April 20, 1988.

27 Institute of Theoretical Physics, University of Tübingen, Germany, April 21-22, 1988.

28 Fachbereich Physik der Universitaet Kaiserslautern, Germany, Wissenschaftlicher Mitarbeiter (BAT-IIA) / Wissenschaftlichen Assistent (C1) (with Prof. DR. Harald J. W. Müller-Kirsten), January 1990- June 1994.

29 Faculty of Mathematics and Physics, Charles University, Prague, Czechoslovakia, October 15-21, 1990.

30 Smolenice, Bratislava, Czechoslovakia, Attended the Conference on "Hadron Structure 90", October 22-26, 1990.

31 DESY-Theory Division, Hamburg, Germany, Attended DESY Theory Workshop, October 1991.

32 LPTHE, Universite de Paris-Sud, Orsay, Cedex, France, October 1991.

33 Division de Physique Theorique, Institute de Physique Nucleaires (IPN), Universite de Paris-Sud, Orsay, Cedex, France, February 15-20, 1992.

34 Montepulciano, Siena, Italy, Attended IIInd Workshop on "Constraints Theory and Quantization Methods", June 28- July 01, 1993.

- 35 Institute for Theoretical Physics, University of Washington, Seattle, USA, June 25-28,1997.
- 36 SLAC-Theory Division, Stanford University, Stanford, California, USA, July 1997.
- 37 University of California at Berkeley, Berkeley, CA, USA, July 1997.
- 38 Fachbereich Physik der Universitaet Kaiserslautern, Germany, May 22-June 20, 1997.
- 39 Fachbereich Physik der Universitaet Kaiserslautern, Germany, May 25-July 10, 1998.
- 40 Institut fuer Physik/Thep, Universitaet Mainz, Germany, June 1998.
- 41 Fakultaet fuer Physik, Universitaet Freiburg, Freiburg, Germany, July 1998.
- 42 Universitaet Kaiserslautern, Germany, May 13-June 29, 2000 (48 Days).
- 43 Institut fuer Theoretische Physik, Universitaet Jena, Jena, Germany, June 2000.
- 44 Institut fuer Theoretische Physik, RUHR Universitaet Bochum, Germany, June 2000.
- 45 Institut fuer Physik/Thep, Universitaet Mainz, Mainz, Germany, June 2000.
- 46 Max Planck Institut fuer Kernphysik, Heidelberg, Germany, Attended the Light-Cone Workshop HD2000, June 12-17, 2000.
- 47 Institut fuer Physik/Thep, Universitaet Mainz, Germany, and FB-Physik der Universitaet Kaiserslautern, Germany, April 15-July 15, 2001.
- 48 Institut fuer Theoretische Physik, Universitaet Jena, Jena, Germany, February 12-13, 2002.
- 49 Fachbereich Physik der Universitaet Kaiserslautern, Germany, October-December, 2001
- 50 Fermilab Theory Division, Batavia, USA, May 05-13, 2007.
- 51 OCTS, Ohio State University, Columbus, Ohio, USA, May 13 - 19, 2007.
- 52 Fachbereich Physik der Universitaet Kaiserslautern, Germany, Visit on DAAD-Reinvitation, May 21-July 24, 2007.
- 53 Division de Physique Theorique, Institute de Physique Nucleaire (IPN), Universite de Paris Sud, Orsay, Cedex, France, May 26-June 10, 2008.
- 54 Institute of Theoretical Physics, University of Heidelberg, Germany, June 11, 2008.
- 55 Department of Physics, University of Kaiserslautern, Germany, June 12- July 21, 2008.

56 Institute of Theoretical Physics, University of Oldenburg, Germany, June, 2008.

57 Mulhouse, France, Attended the International Conference On "Light Cone 2008: Relativistic Nuclear and Particle Physics (LC2008)", July 07-11, 2008.

58 Valencia, Spain, Attended the International Workshop On "Light Cone 2010: Relativistic Hadronic and Particle Physics (LC2010)", June 14-18, 2010.

59 Institute of Theoretical Physics, University of Oldenburg, Germany, June-July, 2010.

60 Southern Methodist University, Dallas, Texas, USA, Attended the International Light-Cone Conference (LC2011) on "Applications of Light-Front Coordinates to Highly Relativistic Systems", May 22-27, 2011.

61. Department of Physics and Astronomy, Iowa State University, Ames, Iowa, June-July, 2011.

62. Department of Physics and Astronomy, Iowa State University, Ames, Iowa, April-July 2012.

63. 62. Department of Physics and Astronomy, Iowa State University, Ames, Iowa, April-July 2013.

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(Signature & Stamp of Head of the Department)