

CURRICULUM VITAE
OF
PROF. SISIR ROY

1. **NAME** : Sisir Roy

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3. **POSITIONS HELD** :

(I) Professor In Charge :Sept.2010- Sept.2012

Physics and Earth Sciences Division

Indian Statistical Institute

(II) Professor :

Physics and Applied Mathematics Unit

Indian Statistical Institute, Kolkata, since 1993

(III) Visiting Professor,

University of Arkansa,Fayetteville, USA

2009 June -2009 August, 2008 June - August

(IV) Distinguished Visiting Professor,

George Mason University, USA

2006 May -2007 May, 2002 Sept - Januray 2004, Feb.2001 - July 2001

Sept. 1998 - May 1999

(V)Visiting Professor ,

University of Linkoping, Sweden

April 2 - June 30, 1994

(VI) Associate Professor :

Indian Statistical Insititute, Kolkata, 1987-1993

(VII) Visiting Scientist :

Henri Poincare Institute, Paris, 1986-87

(VIII) Lecturer :

Indian Statistical Institute, Kolkata,1980-87

4. PRESENT FIELD OF INTEREST :

1. Foundations of Quantum Mechanics
2. Wolf Effect, Cosmological Red Shift and Bayesian approach to Statistical data analysis.
3. Pre-geometry and Planck scale physics.
4. Dynamic geometry ,information processing and role of noise in the brain.

5. EXPERIENCE OF RESEARCH GUIDANCE

1. Four students got Ph.D.
2. Three students working now for Ph.D.
3. One post-doc

6. RESEARCH MONOGRAPHS/ EDITED VOLUMES

1. P.Bandyopadhyaya and S.Roy (Eds.) : "On Quantum Statistics and Foundational Problems in Quantum Mechanics" : Two volumes in Hadronic Journal (Hadronic Press, 1985).
2. R.K. Roychoudhury, S. Roy and H.I. Anderson (Eds) : "Applications of Statistical Methods in Physics and Fluid Dynamics" : Supplementary Volume : Applicandae Mathematicae (Kluwer Academic Publishers, The Netherlands, 1992).
3. S. Jeffers, J.P. Vigiier, S. Roy and G. Hunter (Edts) : "The Present Status of Quantum Theory of Light" (Kluwer Academic Publishers, The Netherlands, 1997).
4. M.W. Evans, J.P. Vigiier, S. Roy and S. Jeffers (Authors) : "The Enigmatic Photon III" (Kluwer Academic Publishers, The Netherlands, 1996).
5. M.W, Evans, J.P. Vigiier, S. Roy and G. Hunter (Edts) : "The Enigmatic Photon IV" (Kluwer Academic Publishers, The Netherlands, 1997).
6. S. Roy : "Statistical Geometry and Applications to Microphysics and Cosmology" (Kluwer Academic Publishers, The Netherlands, 1998).
7. Bo Lehnert and S. Roy : "Extended Electromagnetic Theory with Space-Charge in Vacuo and Nonzero Photon Mass" (World Scientific Publishers, Singapore, 1998).
8. G. Bernroider, S.Roy, R.Takaki (Edts.) (2004) : "Physical Correlate of Mind" FORMA(Special issue), JAPAN.
9. R. Abraham, S.Roy (2010): Demystifying Akasa : Quantum Vacuum and Consciousness, Epigraph, NY, USA.

7. LIST OF PUBLICATIONS :

FOUNDATIONS OF QUANTUM MECHANICS

1. Samyadeb Bhattacharya ,Suman Datta and Sisir Roy(2011)Schroedinger-Langevin equation and ion transport at nano-scale; Journal of Modern Physics**2**, 231-235

2. Samyadeb Bhattacharya and Sisir Roy(2011)Dissipative effect and tunnelling time ; Advances in Mathematical Physics, Article ID 138358.
3. Samyadeb Bhattacharya,Suman Datta and Sisir Roy(2010) Schroedinger-Langevin equation and ion transport at nano-scale , Front. of Non-linear Physics , p. 116-117.
4. R. Dasgupta and Sisir Roy (2008): Multinomial Distribution, Quantum Statistics and Einstein-Podolsky-Rosen Like Phenomena, Foundations of Physics, **38**, 384.
5. R. Abraham and S. Roy (2007) : The Planck Scale and Agent Based Simulations of Quantum Space-time, Int. J. Pure and Appl. Math.**39**,445.
6. R.Dasgupta and S.Roy (2007),Spectrum of zero point field and Statistical Stability, Communications in Applied Analysis **11**,15.
7. R. Dasgupta and Sisir Roy (2007) : Double Coil Resonance Experiment and Partial Reduction of Wave Packet in Quantum Mechanics, Int. J. of Theor. Physics, Springer US, **46**,2976.
8. M. Draganescu and S. Roy (2004) : Pretopology, Quanta of Space and the Fundamental Phenomenological Information of the Universe, FORMA, **19**, N2, 85(JAPAN).
9. S. Roy (2003) *Planck Scale Physics, Pregeometry and the Notion of Time*, in Geometry, p. 341, *Geometry,Physics and Perception* Ed. Buccheri R. et al, NATO series, Kluwer Academic Publsihers, The Netherlands.
10. S. Roy, M. Roy and M. Kafatos (2003) : Maxwell vacuum, the fourth Heisenberg Uncertainty Relation and Space-time Metric Fluctuation : Problems in Classical Electromagnetic theory: Ed. by A.Chykubla (NY)
11. M. Revzen, A. Mann, F. Khanna and S. Roy (2002) : Bell's inequality violation and symmetry : Phys. Lett. A, **224**, 1.
12. Mihai Draganescu, Menas Kafatos and S. Roy (2001) : Main Types of Phenomenological Categories, * E-PREPRINT, MS Reader format, November .

13. Roy, S. and M. Requardt (2001) : (Quantum) Space-time as a Statistical Geometry of Fuzzy Lumps and the connection with random metric spaces : *Classical and Quantum Gravity*, **18**, 3039-3058.
14. Roy, S. (2001) : Frequency dependent Speed of Light and Stochastic Background, in *Contemporary Optics and Electrodynamics, (Second editon of Modern Nonlinear Optics, Vol. 85, of Advances in Chemical Physics)*, ed. by I. Progogine & S.A. Rice (Wiley, NY), pp. 571-621.
15. Roy, S. (2001), Unsharp Observables, non-locality and Fry, Walther and Li Experiment : *Pramana*, **56**, 189.
16. Roy, S. and Kafatos, M. (2000) : Quantum Correlations, Large Scale structure of the Universe and Temporal Non-locality, Proceedings of the First Int. Conf., " *On Studies of Time : From Physics to Psycho (patho)logy*" Kluwer Academic Publishers.
17. Kar, G. and Roy, S. (1999) : Unsharp Observables and Objectification Problem in Quantum Theory : *la Rivista del Nuovo Climento*, **21**, 1.
18. Roy, S. and Kar, G. (1999) : Quantum Cryptography, Eves dropping and Unsharp Spin Measurement; *Lecture Notes in Computer Science*, **1509**, 214.
19. Roy, S. and Kafatos, M. (1999) : Bell-type correlations and Large Scale Structure of the Universe : Instantaneous Action at a Distance Pro and Contra, Ed. by Andrew Chyklubla (Nova Publishing, NY).
20. Roy, S. and Kar, G. (with AIAS Group) (1999) : Quantum Cryptography, Eves dropping and Unsharp Spin Measurement, *Chaos, Solitons and Fractals*, **10**, 1715.
21. Roy, S. and Kar, G. (1996) : Random Spin Measurement and POV Measure, *Pramana : Indian Journal of Physics*, **46**, N1, 9-15(January).
22. Kar, G. and Roy, S. (1995) : Unsharp Spin Observables and CHSH Inequality, *Phys. Lett., A*. **140**, 12.

23. Roy, S. and Duttamajumder, D. (1996) : Indeterminacy Relation, Unsharp Measurement and Quantum Wholeness, *Procd. Nat. Academy of Sci., Allahabad, India.*
24. Borzeszkowski, H.W. and Roy, S. (1992) : Jordon-Fock Uncertainty Relation and Quantum General Theory of Relativity, *Found. Phys.*, **22**, 1079.
25. Roy, S. (1992) : Random Zero-point field and Quantum Correction to the Metric, *Acta Applicandae Mathematica*, **26**, 209.
26. Kar, G. and Roy, S. (1991) : Random Zero-point Field and Modified Lorenzian Metric with Hadronic structure, *Hadronic Journal*, **14**, 431.
27. Dasgupta, R. and Roy, S. (1990), Multinomial Distribution and the Indistinguishability in Quantum Statistics, *Phys. Lett.*, **A149**, 63.
28. Roy, S. and Dasgupta, R. (1990) : Multinomial Distribution and the Quantum Statistics, *Proc. 2nd World Cong. on Prob. Theory*, 18 Aug. - 23 Aug., Uppsala, Sweden.
29. Roy, S. (1990) : Random Zero-point Field and Stochastic Geometry, *Procd. 19th Conf. on Stochastic Processes and their applications*, Spt. 3-8, Eisenach, Germany.
30. Roy, S. (1988) : Stochastic Geometry and Klein's Projection Postulate, *Procd. Stochastic Processes and Applications (Bernoulli Society)*, Italy.
31. Roy, S. (1988) : 4π -periodicity of Spinor Wave Function and Stochastic Geometry, *Reports on Math. Phys.*, **26**, 361.
32. Asanov, G.S., Ponomarenko, S. and Roy, S. (1988) : Finslerian Multi dimensionality, *Associated Space-Time*, *Forst. Der. Phys.* **36**, 679.
33. Roychowdhury, R.K. and Roy, S. (1987) : Stochastic Geometry and Perturbation of Energy Levels of Hydrogen atom, *Phys. Lett. A* **123**, 429.
34. Kyprianidis, A., Roy, S. and Vigier, J.P. (1986) : Distinguishability in Classical and quantum Mechanics, *Phys. Lett. A*, **119**—, 333.

35. Roy, S. (1986) : Stochastic geometry and Origin of Quantum Potential, Phys. Lett. A, **115**, 256.
36. Bandopadhaya, P. and Roy, S. (1985) : Geometrical Aspects of Magnetic Monopoles ;Inter. Journ. Theort. Phys., **24**, 987.
37. Roy, S. (1985), Stochastic Geometry, Operator Formalism in Quantum Mechanics and Fictitious Time in Stochastic Quantization, Hadron. Journ. **1**, 102.
38. Vigier, J.P. and Roy, S. (1985) : Rauch's Experiment and Causal Stochastic Interpretation of Quantum Statistics, Hadron. Journ. **1**, 475.
39. Bandopadhya P. and Roy, S. (1984) : Spin Polarisation and Anisotropic Space-Time, Hadron. Journ. **7**, 249.
40. Roy, S. (1984) : Lie-Helmholtz Space Problem, Hadron. Journ. **7**.
41. Roy, S. (1984) : Lie-Isotopic Lifting, Constancy of Speed of Light and Stochastic Space-Time, Hadron Journ., **7**, 249.
42. Bandopadhya, P. and Roy, S. (1984) : Orbital Angular Momentum with $l = 1/2$ and Anisotropic Space-Time, Hadron. Journ., **7**, 266.
43. Roychowdhury, R.K. and Roy, S. (1982) : Stochastic Space-Time and the Concept of Potential in Classical and Quantum Mechanics, Phys. Rev. **D26**, 133.
44. Roy, S. (1982) : Relativistic Brownian Motion and the Theory of Measurement in Quantum Mechanics, IL Nuovo Climento B, **64**, 81.
45. Roychowdhury, R.K. and Roy, S. (1980) : Stochastic Space-Time and the Concept of Potential in Classical and Quantum Mechanics, Phys. Rev. D. **22**, 2384.
46. Roy, S. (1980) : Relativistic Brownian Motion and the Space-Time Approach to Quantum Mechanics, Journ. Math. Phys., **21**, 71.

47. Bandopadhyay, P., Roy, S. and Das, A. (1978) : Mach's Principle and Quantum Mechanical Response of the Universe, *IL Nuovo Cimento Lett.*, **23**, 429.
48. Bandopadhyay, P., Roy, S. and Sarkar, H. (1978) : Spontaneous Break down of γ_5 and gauge Symmetry at Finite Temperature, *IL Nuovo Cimento A*, **45**, 511.
49. Roy, S. (1977) : Comments on Uncertainty and Quantum Numbers, *IL Nuovo Cimento B*, **42**, 237.
50. Bandopadhyay, P. and Roy, S. (1976) : Some remarks on non-local field theory and space-time quantization, *Int. J. Theor. Phys.* **15**, 323.

ASTROPHYSICS AND COSMOLOGY

1. S.Mukhopadhyaya,S.Roy and S.Bhattacharya (2012): *Fast Bayesian curve-fitting and Clustering in Massive Data with Application to Cosmology*; Sankhya **B**(in press).
2. S.Mukhopadhyaya,S.Roy and S.Bhattacharya (2012):*Curve-Fitting and Clustering in SDSS Data*; Science: Image in Action Edt. by B.Zavidovique et al, p.290-296.
3. S. Roy, D. Datta, J. Ghosh, M. Roy and M. Kafatos (2007) : *Non-parametric tests for Quasar Data and Hubble Diagram, Data Analysis in Astronomy: Modeling and Simulation in Science, Erice, Sicily,Italy*(World Scientific Publications) Eds.Vito de Gesu et al. p.90.
4. S. Roy, J. Ghosh, M. Roy and M. Kafatos (2007) : *Statistical analysis of Quasar data and Validity of the Hubble law, Data Analysis in Astronomy: Modeling and simulation in Science, Erice, Sicily,Italy*(World Scientific Publications) Eds.Vito de Gesu et al. p.99.
5. M. Kafatos, S. Roy and M. Roy (2005) : Variation of Physical Constants, Redshift and Arrow of Time, Acta Physica Polonica B, **36**, N10,3139.
6. H.C. Kandpal, S. Roy and M. Kafatos (2002) : Experimental verification of screen effect and Dynamic Multiple Scattering theory,SPIE **4929**, 74.
7. Roy, S., Kafatos, M. and Dutta, S. (2000) : Shift of spectral lines due to Dynamic Multiple scattering and Screening Effect : Implications for discordant redshifts ,Astronomy and Astrophysics, **353**, 1134.
8. Roy, S., Kafatos, M. and Dutta, S. (1999) : Broadening of spectral lines due to Dynamic Multiple Scattering and the Tully-Fisher relation : Phys. Rev. A, **60**, 273.
9. Roy, S., Datta, S. and Roy, M. (1999) : Frequency Shift of Spectral Lines in Wolf Mechanism and Cosmological Redshift : Bull. Calcutta Math. Soct., **91**, 1.
10. Datta, S., Roy, S., Roy, M. and Moles, M. (1998) : No Blueshift condition in Wolf mechanism : Int. Journ. Theort. Phys. **37**, 1313.

11. Datta, S., Roy, S., Roy, M. and Moles, M. (1998) : Effect of Multiple Scattering on the shift of Spectral Lines : Phys. Rev. A., **58**, 720.
12. Datta, S., Roy, S., Roy, M. and Moles, M. (1998) : Frequency Shift of Spectral Lines generated by Dynamic Multiple Scattering : Int. Journ. Theor. Phys. **37**, 1469.
13. Sinha, M. and Roy, S. (1995) : Highest Energy Cosmic Rays and Frame Dependence, Proc. ICRC, **24**, Roma.
14. Roy, S. and Sinha, M. (1987), Cosmological model with λ -constant, IL Nuovo Cimento B, **100**, 709.
15. Sinha, M. and Roy, S. (1985) : Stochastic Space-Time and the Primary Energy Spectrum of Cosmic Rays at $E \geq 19eV$ IL Nuovo Cimento C, **8**, 531.

BRAIN FUNCTION MODELING

1. Sisir Roy and Rodolfo Llinas (2012)Metric Tensor as Degree of Coherence in the Dynamical Organization of the Central Nervous System (accepted for publication)
2. S.Roy and R.Llinas (2012)The role of Noise in Brain Function, Science :Image in Action Ed. by Z.Bertrand et al (World Scientific Publsihers, Singapore),p.34-44.
3. Sisir Roy and Rodolfo Llinas (2009),Relevance of Quantum Mechanics on some aspects of Ion Channel Function, Accepted for publication in Comptes Rendus B **332**,517.
4. Rodolfo Llinas and Sisir Roy (2009),The "Prediction Imperative" as the Basis for Self Awareness; Philosophical Transaction of Royal Soceity B **364**,1301.
5. Sisir Roy , Indranil Mitra, Rodolfo Llinas (2008),Non Markovian Noise mediated through Anomalous Diffusion within Ion Channels, Phys.Rev. E, **78**,041920.
6. S. Roy and R. Llinas (2008) : Dynamic Geometry, Brain Function Modeling and Consciousness, Progress in Brain Research,**168**,133.

7. Sisir Roy and Indranil Mitra (2008):Neurons, Cooperativity and the Role of Noise in Brain, *NeuroQuantology* **6**, No.2.
8. G. Bernroider and S. Roy (2005): Quantum entanglement of K^+ ions, multiple channel states, and the role of noise in the brain, *SPIE* **5841**, 205-213.
9. S. Roy and Menas Kafatos (2004): Quantum Processes, Functional Geometry : New Perspectives in Brain Dynamics :FORMA **19**, 69.
10. G. Bernroider and S. Roy(2004): Quantum - Classical Correspondences in Brain : Scaling, Action Distances and Predictability behind Neural Signals : FORMA, **19**,55.
11. Sisir Roy (2003),Quantum Information and levels of consciousness; Philosophy and Science: An Exploratory Approach to Consciousness, RKMIC, Calcutta,p.223.
12. Roy, S. and Kafatos, M. (2000) : Complementary Principle and Cognition Process : Physics Essays, **12**, 662.

COMPUTER SCIENCE AND IMAGE ANALYSIS

1. Vito de Gesu and S. Roy (2002) : Pictorial indexes and soft-image Distances :Lecture notes in Artificial Intelligence (Springer) : **2275**, 360.
2. Vito de Ges, S. Roy(2000): Fuzzy measures for image distance, in: F. Masulli, R. Parenti, G. Pasi (Eds.), *Advances in Fuzzy Systems and Intelligent Technologies*, Shaker Publishing, NL.
3. Roy, S., Kundu, M.K. and Grandlund, G.H. (1996) : Uncertainty Relations and Time Frequency Distribution for Unsharp Observables, *Inform. Sci.*, **89**, 193.

ELECTROMAGNETIC THEORY

1. R. Dasgupta and Sisir Roy (2007) : Spectrum of the Zero-point Field and Statistical Stability, Comm. Appl. Analysis (Dynamic Publishers, USA), **11**,N1, 23.
2. Roy, S. (with AIAS Group)(2004) : Development of the Evans Wave Equation in the Weak Field Limit : The Electrogravitic Equation, Found. Phys. Lett.(FPL) **17**, 497.
3. Roy, S. (with AIAS Group)(2004) : Development of the Evans Wave Equation in the Weak Field Limit : The Electrogravitic Equation, Found. Phys. Lett. **17**, 497.
4. Roy, S. (with AIAS Group) (2003) : Aharanov Bohm effect at the basis of electromagnetic energy in the vacuum : Found. Phys. Letter **33**, N1, 561
5. Roy, S. (with AIAS Group) (2003) : Derivation of O(3) Electrodynamics from the Sach's Einstein Theory of General Relativity : FPL, **16**, 275.
6. Roy, S. (with AIAS Group) (2001) : Derivation of B(3) Field and concomitant vacuum energy density from the Sachs theory of electrodynamics : FPL, **14**, 589.
7. Roy, S. (with AIAS Group) (2001) : Development of Sachs theory of Electrodynamics : FPL, **14**, 595.
8. Roy, S. (with AIAS Group) (2001) : Anti-Gravity Effects in Sachs Theory of Electrodynamics : FPL, **14**, 601.
9. Roy, S. (with AIAS Group) (2001) : Explanation of the Motionless Electromagnetic generator by Sach's Theory of electrodynamics, FPL, **14**, 387 (2001).
10. Roy, S. (with AIAS Group) (2001) : Explanations of the motionless Electromagnetic Field Generation with O(3) Electrodynamics, Foundation Phys. Lett. **14**, 87.
11. Roy, S. (with AIAS Group) (2000) : The effect of Vacuum Energy on the Atomic Spectrum : Foundation of Physics Letter, **13**, 289.

12. Roy, S. (with AIAS Group) (2000) : Runway Solutions of the Lehnert Equations : The possibility of extracting energy from the vacuum : *Optik*, **111**, 407.
13. Lehnert, B., Roy, S. and Deb, A. (2000) : An Extended Electromagnetic Theory : *Apeiron*, **7**, 53.
14. Roy, S. (with AIAS Group) (2000) : $O(3)$ Electrodynamics - A review in *Contemporary Optics and Electrodynamics*, (Second edition of *Modern Nonlinear Optics*, Vol. 85, of *Advances in Chemical Physics*), ed. by I. Prigogine & S.A. Rice (Wiley, NY).
15. Roy, S. (with AIAS Group) (2000) : $O(3)$ Electrodynamics - Plenary paper for Science 2000, petrograd, Russia.
16. Roy, S. (with AIAS Group) (2000): Derivation of the Lehnert Field equation from Gauge Theory in the Vacuum : space Charge and Current, *Found. Phys. Lett.***13**,179.
17. Roy, S. (with AIAS Group) (2000) : On the representation of the Maxwell Heaviside equation in terms of the Barut field four vector : *Optik* **111**, 246-248.
18. Roy, S. (with AIAS Group) (2000) $SU(2) \times SU(2)$ Electro-weak Theory in Lepi Data on Z -particle Production : *Found. Phys. Lett.* **13**, 193.
19. Roy, S. (with AIAS Group) (2000) Interferometry in Higher Symmetry Forms of Electrodynamics and Physics Optics; *Physica Scripta*, **61**, 79.
20. Roy, S. (with AIAS Group) (2000) : On the Nature of the $B(3)$ Field : *Physica Scripta*, **61**, 287.
21. Roy, S. (with AIAS Group) (2000) : Ultra High Frequency Fermion Resonance Induced by Circularly Polarized Radiation : The Resonance Inverse Farady effect : *Frontier Perspectives*, **8**, 15.
22. Roy, S. (with AIAS Group) (2000) : Equation of the Young Mills Theory of Classical Electrodynamics : *Optik*, **111**, 53.

23. Roy, S. (with AIAS Group) (2000) : Operator Derivation of the Gauge Invariant Proca. & Lehnert Equations, Elimination of the Lorentz Condition : Found. Phys. **39**, 1123.
24. Roy, S. (with AIAS Group) (2000) : Classical Electrodynamics without the Lorentz Condition : Extracting Energy from the vacuum, Phys. Scripta, **61**, 513.
25. Roy, S. (with AIAS Group) (1999) : Inconsistencies of the $U(1)$ Theory of Energy Momentum Tensor : Found. Phys. Lett. **12**, 589.
26. Roy, S. (with AIAS Group) (1999) : Self Inconsistencies of the $U(1)$ Theory and Michelson Interferometry : Found. Phys. Lett. **12**, 589.
27. Roy, S. (with AIAS Group) (1999) : A general theory of Non-Abelian Electrodynamics : FPL **12**, 251.
28. Roy, S. (with AIAS Group) (1999) : The New Maxwell Electrodynamical Equations, New Tools for New Technologies : SPecial issue of AIAS papers in the Journal of New Eurys. Fall.
29. Roy, S. (with AIAS Group) (1999) : Link between the Non-Abelian Stokes Theorem and the B-Cyclic Theorem : Apeiron, **6**, 3-4.
30. Lenhert, Bo. and Roy, S. (1997) : "Extended Electromagnetic Theory, Angular Momentum and $B(3)$ field" Apeiron **4**, 59.
31. Roy, S. and Roy, M. (1997) : "Einstein-de Broglie-Vigier Theory of Light and Simultaneous Existence of Transverse and Longitudinal Photons : The present Status of Quantum Theory of Light" Ed. by Jeffers S., Vigier J.P., Roy, S. & Hunter G. (Kluwer Academic Publishers, 1997), p. 107.
32. Roy, S., Kar, G. and Roy, M. (1996) : "Propagation of Electromagnetic Waves in Random Medium and non-zero rest mass", Int. Journ. Theort. Phys., **35**, 579.
33. Evans, M.W., Roy, S. and Jeffers, S. (1995) : The Inverse Faraday Effect, Fermion Spin and $B(3)$ Field, Il Nuovo Cimento B, **110**, 1473.

34. Kar, G., Sinha, M. and Roy, S. (1993) : Non-zero rest mass of Photon, Maxwell equation and Conformal Metric Fluctuation, Int. Journ. Theort. Phys. **32**, 1052.
35. Sinha, M. and Roy, S. (1990) : Multiplicity Distribution at High Energy and approach to Chaos in Hadron Production, 20th ICRC, HE 1.2-7, 37, Adeleide, Australia.
36. Sinha, M. and Roy, S. (1985) : Multi-particle Production and the Hadronic Spectrum at High Energy, Procd. 19th ICRC, HE 4.1-14, La Jola, USA.

PHILOSOPHICAL PAPERS

1. Ralph Abraham and Sisir Roy(2012)A Digital Solution to the Mind/Body Problem;Stepping beyond the Newtonian Paradigm in Biology Towards an Integrable Model of Life: Accelerating Discovery in the Biological Foundations of Science Ed. by Plamen L. Simeonov et al.
2. Ralph Abraham and Sisir Roy(2012)The Atomistic Revival; World Futures (Taylor & Francis)**68** (January 2012), pp. 30-39.
3. Sisir Roy (2012)Functional Geometry, Internal Representation and Consciousness,Proceed. of Inte.Conference *Lookingin*, NIAS,Bangalore.
4. Sisir Roy (2012)Quantum Entanglement and Metaphysics of Relations, Emergence of New Perspective in Philosophy Ed.by M.Kapoor et al.
5. Lothar Schfer, Diogo Valadas Ponte, and Sisir Roy(2009)Quantum Reality and Ethos : A Thought Experiment Regarding the Foundation of Ethics in Cosmic Order;Zygon(USA), **44** no. 2;265-287.
6. Sisir Roy(2009),Geometry of brain function and Consciousness: Understanding Consciousness : Recent Advances,RKMIC, Calcutta, p.289.