

CURRICULUM VITAE

1. Personal Information

Surname: Ali
Given names: Syed Twareque
Citizenship: Canadian
Professional Address: Concordia University
Department of Mathematics and Statistics
1455 de Maisonneuve Boulevard West
Montréal, Québec
CANADA H3G 1M8
Tel: +(514)-848-2424 Ext 3237
Fax: +(514)-848-2831
e-mail: stali@mathstat.concordia.ca

2. Higher Studies and Degrees

Degree/Year	Discipline	University
Ph.D./1973	Mathematical Physics	University of Rochester Rochester, N.Y.
M.Sc./1966	Theoretical Physics	University of Dhaka Dhaka, Bangladesh

3. Professional Experience

Visiting Scientist	Dec. 1973 - June 1975	International Centre for Theoretical Physics Trieste, Italy
Visiting Lecturer and Research Associate	July 1975 - June 1978	University of Toronto Toronto, Ontario
Assistant Professor	July 1978 - June 1979	University of Prince Edward Island
Wissenschaftlicher Mitarbeiter and Dozent	July 1979 - Aug. 1981	Institut für Theoretische Physik Technische Universität Clausthal Clausthal, Germany
Assistant Professor	Sept. 1981 - May 1983	Concordia University Montréal, Québec
Associate Professor	Aug. 1983 - May 1990	Concordia University Montréal, Québec
Professor	June 1990 - present	Concordia University

6. Publications and Other Scholarly Works

BOOKS AND MONOGRAPHS

1. *Operationally Defined Observables in Quantum Mechanics*, Ph.D. dissertation, the University of Rochester (1973), Rochester, N.Y. 14627. U.S.A.
2. Translation of *Quantique — Rudiments* by J.- M. Lévy-Leblond and F. Balibar into English; published by North Holland, Amsterdam (1990); English title *Quantics — Rudiments of Quantum Physics*.
3. Joint editor along with P. Morales, *Proceedings of the Joint Concordia-Sherbrooke Seminar Series on Functional Integration Methods in Stochastic Quantum Mechanics, Canada, Sep.18 - Dec.4, 1987*, *Supplemento ai Rendiconti del Circolo Matematico di Palermo, Serie II, Num. 25* (1991).
4. Joint editor along with I.M. Mladenov and A. Odziejewicz, *Quantization and Coherent States Methods*, Proceedings of the XIth Workshop on Geometric Methods in Physics, Białowieża, Poland, July 7-14, 1992; World Scientific, Singapore (1993).
5. Joint editor along with J.-P. Antoine, I.M. Mladenov and A. Odziejewicz, *Quantization and Infinite Dimensional Systems*, Proceedings of the XIIth Workshop on Geometric Methods in Physics, Białowieża, Poland, July, 1-7, 1993; Plenum, London (1994).
6. Joint editor along with J.-P. Antoine, W. Lisiecki, I.M. Mladenov and A. Odziejewicz, *Quantization, Coherent States and Complex Structures*, Proceedings of the XIIIth Workshop on Geometric Methods in Physics, Białowieża, Poland, July, 8-14, 1994; Plenum, London (1995).
7. Joint editor along with A. Strasburger and A. Odziejewicz, *Quantizations, Deformations and Coherent States*, Proceedings of the XVth Workshop on Geometric Methods in Physics, Białowieża, Poland, July, 1-7, 1996; special issue of the Reports on Mathematical Physics, Vol.40, No.2 (1997).
8. Joint editor along with A. Strasburger, J.-P. Antoine, J.-P. Gazeau and A. Odziejewicz, *Quantization, Coherent States and Poisson Structures*, Proceedings of the XIVth Workshop on Geometric Methods in Physics, Białowieża, Poland, July, 9-15, 1995; Polish Scientific Publishers PWN, Warsaw (1998).
9. Joint editor along with M. Schlichenmaier, A. Strasburger and A. Odziejewicz, *Coherent States, Differential and Quantum Geometry*, Proceedings of the XVIth Workshop on Geometric Methods in Physics, Białowieża, Poland, June 30 - July 6, 1997; special issue of the Reports on Mathematical Physics, Vol.43, Nos. 1 and 2 (1999).

10. Joint editor along with H.-D. Doebner, M. Keyl and R. Werner, *Trends in Quantum Mechanics*, Proceedings of the International Symposium held in Goslar, Germany, July 28 - 31, 1998; World Scientific, Singapore (2000).
11. With J.-P. Antoine and J.-P. Gazeau, *Coherent States, Wavelets and their Generalizations*, Springer-Verlag, New York (2000).
12. Joint editor along with M. Schlichenmaier, A. Strasburger and A. Odziejewicz, *Coherent States, Quantization and Gravity*, Proceedings of the XVIIIth Workshop on Geometric Methods in Physics, Białowieża, Poland, July 3-9, 1998; Wydawnictwa Uniwersytetu Warszawskiego, Warszawa (2001).
13. Joint editor along with A. Odziejewicz, P. Kielanowski and M. Schlichenmaier, *Geometrical Methods in Physics: Bialowieza XXI and XXII*, Proceedings of the of the XXI and XXII Workshop on Geometrical Methods in Physics, June/July 2002 and 2003, Bialowieza, Poland; Journal of Nonlinear Mathematical Physics, Vol. 11 Supplement (2004).
14. With J.-P. Antoine, R. Murenzi and P. Vandergheynst, *Two-Dimensional Wavelets and their Relatives*, Cambridge University Press (2004).
15. Joint editor with G.G. Emch, A. Odziejewicz, M. Schlichenmaier and L. Woronowicz, *Twenty Years of Bialowieza: A Mathematical Anthology*, (Aspects of Differential Geometric Methods in Physics), World Scientific, Singapore (2005).
16. Joint editor with J.-P. Gazeau, G.A. Goldin, K-H Neeb, A. Odziejewicz and M. Schlichenmaier, *Proceedings of the XXIV Workshop on Geometric Methods in Physics*, Bialowieza, Poland, June 26 - July 2, 2005; Journal of Geometry and Symmetry in Physics, Vol. 5 (2006).
17. Joint editor with Kalyan B. Sinha, *Contributions in Mathematical Physics – A tribute to Gerard Emch*, Hindustan Book Agency, New Delhi, India (2007).

ARTICLES PUBLISHED IN JOURNALS WITH REFEREE SYSTEM

1. With A.L. Choudhury, A.K. Rafiqullah and D. Hussain, *Electromagnetic interactions of the meson-baryon resonances under the 70-representation of SU(6)*, Proc. Pak. Acad. Sci. **3**, 13-20 (1966).
2. With M. Bace and J.H. Eberly, *Evanescence waves in potential scattering from regular lattices*, Phys.Rev. **D5**, 1262-1273 (1972).
3. *Evanescence waves in quantum electrodynamics with unquantized sources*, Phys. Rev. **D7**, 1668-1675 (1973).
4. With G.G.Emch. *Fuzzy observables in quantum mechanics*, J. Math. Phys. **15**, 176-182 (1974).

5. With G.C. Ghirardi, *Unstable systems and quantum measurement processes*, Nuovo Cimento **24A**, 220-238 (1974).
6. With L. Fonda and G.C. Ghirardi, *Pertinence of the semi-group law in the theory of the decay of an unstable elementary particle*, Nuovo Cimento **25A**, 134-148 (1975).
7. With H.D. Doebner *On the equivalence of non-relativistic quantum mechanics based upon sharp and fuzzy measurements*, J. Math. Phys. **17**, 1105-1111 (1976).
8. With E. Prugovečki, *Systems of imprimitivity and representations of quantum mechanics on fuzzy phase spaces*, J. Math. Phys. **18**, 219-228 (1977).
9. With E. Prugovečki, *Classical and quantum statistical mechanics in a common Liouville space*, Physica **8A**, 501-521 (1977).
10. With E. Prugovečki, *Quantum statistical mechanics on stochastic phase space*, International J. Theor. Phys. **16**, 689-706 (1977).
11. *On some representations of the Poincaré group on phase space*, J. Math. Phys. **20**, 1385-1391 (1979).
12. *On some representations of the Poincaré group on phase space II*, J. Math. Phys. **21**, 818-829 (1980).
13. With E. Prugovečki, *Self-consistent relativistic model for extended spin-1/2 particles in external fields*, Nuovo Cimento *63A*, 171-203 (1981).
14. With R. Gagnon and E. Prugovečki, *Conserved quantum probability currents on stochastic phase space*, Canadian J. Phys. **59**, 807-811 (1981).
15. *Stochastic phase space formulation and non-potential interactions*, Hadronic Journal **5**, 1001-1022 (1982).
16. *Quantization of relativistic systems on phase space*, Czech. J. Phys. **B32**, 609-613 (1982).
17. With N. Giovannini, *On some K-representations of the Poincaré and Einstein groups*, Helv. Phys. Acta **56**, 1140-1150 (1983).
18. *Commutative systems of covariance and a generalization of Mackey's imprimitivity theorem*, Canadian Math. Bulletin **27**, 390-397 (1984).
19. *Extended harmonic analysis on phase space and systems of covariance*, Hadronic Journal **8**, 237-244 (1985).
20. *Stochastic Localization, Quantum Mechanics on Phase Space and Quantum Space-time*, Rivista del Nuovo Cimento Vol. **8**, No. 11 (1985), pp. 1-128.

21. With E. Prugovečki, *Mathematical problems of stochastic quantum mechanics: harmonic analysis on phase space and quantum geometry*, Acta Applicandae Mathematicae **6**, 1-18 (1986).
22. With E. Prugovečki, *Extended harmonic analysis of phase space representations for the Galilei group*, Acta Applicandae Mathematicae **6**, 19-45 (1986).
23. With E. Prugovečki, *Harmonic analysis and systems of covariance for space representations of the Poincaré group*, Acta Applicandae Mathematicae **6**, 47-62 (1986).
24. With G.G. Emch, *Geometric quantization: Modular reduction theory and coherent states*, J. Math. Phys. **27**, 2936-2943 (1986).
25. *Functional analytic methods in stochastic quantum mechanics*, Rendiconti di Circolo Matematico di Palermo Serie **II**, Num. 17, 11-46 (1987).
26. With J.A. Brooke, P. Busch, R. Gagnon and F.E. Shroeck, Jr., *Current conservation as a geometric property of space-time*, Canadian J. Phys. **66**, 238-244 (1988).
27. *Phase space quantization on orbits of the Poincaré group*, Nucl. Phys. **B**. (Proc. Suppl.) **6**, 102-103 (1989).
28. With J.-P. Antoine, *Coherent states of the 1+1 dimensional Poincaré group. Square integrability and a relativistic Weyl transform*, Ann. Inst. H. Poincaré **51**, 23-44 (1989).
29. With J.-P. Antoine and J.-P. Gazeau, *De Sitter to Poincaré contraction and relativistic coherent states*, Ann. Inst. H. Poincaré **52**, 83-111 (1990).
30. With H.-D. Doebner, *The ordering problem in quantum mechanics: Prime quantization and a physical interpretation*, Phys. Rev. **A41**, 1199-1210 (1990).
31. With J.-P. Antoine and J.-P. Gazeau, *Square integrability of group representations on homogeneous spaces and generalized coherent states*, Rendiconti di Circolo Matematico di Palermo Serie **II**, Num. 26, 47-56 (1991).
32. With J.-P. Antoine and J.-P. Gazeau, *Square integrability of group representations on homogeneous spaces. I. Reproducing triples and frames*, Ann. Inst. H. Poincaré **55**, 829-856 (1991).
33. With J.-P. Antoine and J.-P. Gazeau, *Square integrability of group representations on homogeneous spaces. II. Coherent and quasi-coherent states – The case of the Poincaré group*, Ann. Inst. H. Poincaré **55**, 857-890 (1991).
34. With J.-P. Antoine and J.-P. Gazeau, *Continuous frames in Hilbert space*, Annals of Physics **222**, 1-37 (1993).

35. With J.-P. Antoine and J.-P. Gazeau, *Relativistic quantum frames*, Annals of Physics **222**, 38-88 (1993).
36. With H.-D. Doebner and U.-A. Mueller, *On the Nairmark extension of a commutative normalized POV-measure acting on a Hilbert space of functions over a differential manifold*, Ann. Sci. Math. Québec **17**, 1-9 (1993).
37. With L.V. Denisov, *On a composite Fourier-Wavelet transform and square integrable group representations*, J. Math. Phys. **35**, 4205-4216 (1994).
38. With U.A. Mueller, *Quantization on a coadjoint orbit of the Poincaré group*, J. Math. Phys. **35**, 4405-4422 (1994).
39. With G.G. Emch and Amine El-Gradechi, *Modular algebras in geometric quantization*, J. Math. Phys. **35**, 6237-6243 (1994).
40. With J.-P. Antoine, J.-P. Gazeau and U.-A. Müller, *Coherent states and their generalizations: A mathematical overview*, Reviews in Math. Phys. **7**, 1013-1104 (1995).
41. With J.P. Gazeau and M.R. Karim, *Frames, the β -duality in Minkowski space and spin-1/2 coherent states*, J. Phys. **A29**, 5529-5549 (1996).
42. *Systems of covariance in relativistic quantum mechanics*, International J. Theor. Phys. **37**, 365-373 (1998).
43. *A general theorem on square-integrability: vector coherent states*, J. Math. Phys. **39**, 3954-3964 (1998).
44. With M.R. Karim and M. Bodruzzaman, *A relativistic windowed Fourier transform*, Proc. IEEE SoutheastCon 2000, 253-260 (2000).
45. With N.M. Atakishiyev, S.M. Chumakov and K.B. Wolf, *The Wigner function for general Lie groups and the wavelet transform*, Ann. Henri Poincaré **1**, 685-714 (2000).
46. With A. Krasowska and R. Murenzi, *Wigner functions from the two-dimensional wavelets group*, J. Optical Soc. Am. **A17**, 1-11 (2000).
47. With A. Krasowska, *Wigner functions for a class of semi-direct product groups*, J. Phys. **A36**, 2801-2820 (2003).
48. With K. Thirulogasanthar, *A class of vector coherent states defined over matrix domains*, J. Math. Phys. **44**, 5070-5083 (2003).
49. With A.L. Hohoueto, T. Kengatharam and J.-P. Antoine, *Coherent state lattices and square integrability of representations*, J. Phys. **A36**, 11817-11835 (2003).
50. With H. Führ and A. Krasowska, *Plancherel inversion as unified approach to*

wavelet transforms and Wigner functions, Annales H. Poincaré **4**, 1015-1050 (2003).

51. With R. Roknizadeh and M.K. Tavassoli, *Representations of coherent states in non-orthogonal bases*, J. Phys. **A37**, 4407-4422 (2004).

52. With M. Engliš and J.-P. Gazeau, *Vector coherent states from Plancherel's Theorem and Clifford algebras*, J.Phys. **A37**, 6067-6089 (2004).

53. With F. Bagarello, *Some physical appearances of vector coherent states and CS related to degenerate Hamiltonians*, J. Math. Phys. **46**, 053518-1 – 053518-28 (2005).

54. With M. Engliš, *Quantization methods: A guide for physicists and analysts*, Reviews in Math. Phys. **17**, 391-490 (2005).

55. With M. Engliš, *A matrix valued Berezin-Toeplitz quantization*, J. Math. Phys. **48**, 053504-1 – 053504-14 (2007).

PREPRINTS, AND BOOKS AND PAPERS TO APPEAR

1. *Covariant conditional expectations in quantum probability theory*, preprint, ICTP, Trieste, **IC/74/72**, pp. 27.

2. *An integral representation for a class of POV-measures*, preprint, University of Toronto (1976), pp. 24.

3. *Harmonic analysis on phase space. Reproducing kernel Hilbert spaces POV-measures and systems of covariance*, preprint, Concordia Univ. (1984), pp. 51.

4. With J.A. Brooke and J.-P. Gazeau, *A geometric framework for squeezed states*, to appear.

5. With G.A. Goldin *Some coherent states of the diffeomorphism group*, to appear.

6. With J.-P. Gazeau, *Complex Structures, Relativity Groups and Quantization*, book in preparation.

7. *Optimization Theory: An Intermediate Text*, book in preparation.

8. *What are wavelets but frames?*, preprint, Concordia University, to appear in the Curzon Hall Centenary Volume, Dhaka, Bangladesh (2005), pp. 13.

9. With G. Honnouvo *Gabor type frames from generalized Weyl-Heisenberg groups*, preprint, Concordia University (2005), pp. 23.

CONTRIBUTIONS TO BOOKS AND PUBLISHED LECTURES

1. *Unstable particles and quantum stochastic processes*, in *Functional and Probabilistic*

Methods in Quantum Field Theory, **Vol.II**, Ed., B. Jancewicz; Series: Winter School of Theoretical Physics in Karpacz, Gen. Ed., J. Łopuszański; Wrocław University Press, Wrocław (1976), pp. 5-40.

2. *Irreversibility in the theory of the decay of an unstable elementary particle*, in the proceedings of the Bose Symposium on Physics, University of Dacca (1974), pp. 21.

3. With E. Prugovečki, *Phase space representations of the Poincaré group and their applications to relativistic particle dynamics*, in *Group Theoretical Methods in Physics*, Eds., W. Beigelböck, A. Bohm and E. Takesugi; Series: Lecture Notes in Physics, **Vol.94**, Gen. Eds., J. Ehlers, et al.; Springer-Verlag, Berlin-Heidelberg, New York (1979), pp. 184-185.

4. *The Poincaré group on phase space: Applications to the Dirac equation*, in the proceedings of the International Symposium on Physics, University of Dacca (1979).

5. With E. Prugovečki, *Consistent models of spin-0 and spin 1/2 extended particles scattering in external fields*, in *Mathematical Methods and Applications of Scattering Theory*, Eds., J.A. De Santo, A.W. Saenz and W.W. Zachary; Series: Lecture Notes in Physics, **Vol.130**, Gen. Eds., J. Ehlers, et al.; Springer-Verlag, Berlin-Heidelberg-New York (1980), pp. 197-203.

6. *Aspects of relativistic quantum mechanics on phase space*, in *Differential Geometric Methods in Mathematical Physics*, Ed., H.-D. Doebner; Series: Lecture Notes in Physics, **Vol.139**, Gen. Eds., J. Ehlers, et al.; Springer-Verlag, Berlin-Heidelberg-New York (1981), pp. 49-76.

7. *A geometrical property of POV-measures and systems of covariance*, in *Differential Geometric Methods in Mathematical Physics*, Eds., H.D. Doebner, S.I. Andersson and H.R. Petry; Series: Lecture Notes in Mathematics, **Vol.905**, Gen. Eds., A. Dold and B. Eckmann; Springer-Verlag, Berlin-Heidelberg-New York (1982), pp. 207-228.

8. *Non-local interactions in stochastic quantum mechanics*, in the Proceedings of the XVIII-th Winter School of Theoretical Physics, Karpacz, Poland (1981); Harwood Academic Publishers, *Studies in High Energy Physics*, **Vol.4**.

9. *A generalized imprimitivity theorem for a class of POV-measures*, in *Group Theoretical Methods in Physics*, Eds., M. Serdaroglu and E. Inonu; Series: Lecture Notes in Physics, **Vol.180**, Gen. Eds., H. Araki, et al; Springer-Verlag, Berlin- Heidelberg-New York-Tokyo (1983), pp. 492-494.

10. *Harmonic analysis on phase space and Born's quantum metric for space-time*, in *Group Theoretical Methods in Physics*, Eds., G. Denardo, G.C. Ghirardi and T. Weber; Series: Lecture notes in Physics, **Vol.201**, Gen. Eds., H. Araki, et al; Springer-Verlag, Berlin-Heidelberg-New York-Tokyo (1984), pp. 479-482.

11. *Quantization using reproducing kernels; Phase space setting and modular structure*, in the *Proceedings of the XIIIth International Conference on Differential Geometric Methods in Theoretical Physics*, held in Shumen, Bulgaria, August 1984; Eds., H.-D. Doebner and T.D. Palev; World Scientific Publishing Co. Pte. Ltd., Singapore (1986), pp. 3-16.
12. With H.-D. Doebner, *Quantization, topology and ordering*, in *The Physics of Phase Space*; Eds., Y.S. Kim and W.W. Zachary; Series: Lecture Notes in Physics, **Vol.278**, Gen. Eds., H.Araki, et al; Springer-Verlag, Berlin-Heidelberg-New York-Tokyo (1987) pp. 330-346.
13. With S. De Bièvre, *Coherent states and quantization on homogeneous spaces*, in *Group Theoretical Methods in Physics*, Eds., H.-D. Doebner, J.-D. Hennig and T.D. Palev; Series: Lecture Notes in Physics, **Vol. 313**, Gen. Eds., H.Araki, et al; Springer, Berlin (1988), pp. 201-207.
14. *Coherent states and square integrable group representations: A general setting*, in *Lie Theory, Differential Equations and Representation Theory*, Ed., V. Hussin, Les Publ. CRM, Montréal (1990), pp. 1-11.
15. *Generalized coherent states and square integrability*, in *Integral Systems, Solid State Physics and Theory of Phase Transitions. Pt.2. Symmetries and Algebraic Structures in Physics*, Eds., V.V. Dodonov and V.I. Man'ko; Series: Proceedings of the Lebedev Physics Institute, **Vol. 188**; Nova Science Publishers, Commack NY, U.S.A. (1991).
16. *Square integrability and the diffeomorphism group*, in *II^e Rencontre de Théorie des Représentations*, Université de Sherbrooke, Rapport n^o 82, Eds., I. Assem and B. Courteau, April (1991). pp. 21-37.
17. With G. A. Goldin, *Quantization, coherent states and diffeomorphism groups*, in *Differential Geometry, Group Representations and Quantization*, Eds., J.D. Hennig, W. Lücke and J. Tolar; Series: Lecture Notes in Physics, **Vol. 379**, Gen. Eds., H. Araki, et al.; Springer, Berlin (1991), pp. 147-190.
18. With J.A. Brooke and J.-P. Gazeau, *Squeezed states: A Geometric Framework*, in *Workshop on Squeezed States and Uncertainty Relations*, Eds., D.Han, Y.S.Kim and W.W. Zachary; Proceedings of a workshop held at the University of Maryland, College Park, Maryland, March 28-30, 1991; NASA Conference Publication 3135 (1992), pp. 339-341.
19. *Survey of quantization methods*, in *Classical and Quantum Systems – Foundations and Symmetries*: Proceedings of The Second International Wigner Symposium, Goslar, Germany, July 16-20, Eds., H.-D. Doebner, W. Scherer and F.Schroeck, Jr.; World Scientific, Singapore (1993).
20. With J.-P. Antoine, *Quantum frames, quantization and dequantization*, in *Quantization and Infinite Dimensional Systems*: Proceedings of the XIIth Workshop on Geomet-

ric Methods in Physics, Białowieża, Poland, July 1-7, 1993; Eds: S. T. Ali, J.-P. Antoine, I.M. Mladenov and A. Odziejewicz, Plenum, London (1994), pp. 133-145.

21. With J.-P. Gazeau, *Spin coherent states for the Poincaré group*, in *Quantization, Coherent States and Complex Structures: Proceedings of the XIIIth Workshop on Geometric Methods in Physics*, Białowieża, Poland, July, 8-14, 1994; Eds: J.-P. Antoine, S. T. Ali, W. Lisiecki, I.M. Mladenov and A. Odziejewicz, Plenum, London (1995), pp. 123-129.

22. *Coherent states and square-integrable group representations*, in *Proceedings of the 5th Wigner Symposium*, Vienna, Austria, Aug. 25-29 (1997); Eds: P. Kasperkovitz and D. Grau, World Scientific, Singapore (1998), pp. 112-114.

23. *Coherent states and quantization*, in CRM Proceedings and Lecture Notes, **Vol 18** (1999), pp. 233-243; Proceedings of the Workshop on Spline Functions and the Theory of Wavelets, Centre de Recherches Mathématiques, Montréal (1996).

24. *The Plancherel transform, wavelets, coherent states and Wigner functions*, in *Contemporary Problems in Mathematical Physics: Proceedings of the First International Workshop*, Cotonou, Republic of Benin, Oct. 31 - Nov. 5, 1999; Eds: Jan Govaerts, M. Norbert Hounkonnou and William A. Lester, Jr., World Scientific, Singapore (2000), pp. 97-108.

25. *A generalized Wigner function, coherent states and quantization*, in *Quantum Theory and Symmetries*, Proceedings of the International Symposium held in Goslar, Germany, July 18-22, 1999; Eds: H.-D. Doebner, V.K. Dobrev, J.-D. Hennig and W. Luecke, World Scientific, Singapore (2000), pp. 29-38.

26. *Quantization Techniques: A quick overview*. in *Contemporary Problems in Mathematical Physics II: Proceedings of the Second International Workshop*, Cotonou, Republic of Benin, Oct. 29 - Nov. 2, 2001, Eds: Jan Govaerts, M. Norbert Hounkonnou and Alfred Z. Msezane, World Scientific, Singapore (2002), pp. 3-78.

27. *Group theoretical aspects of the continuous wavelet transform*, in *Wavelets and their Applications: Proceedings of the International Conference on Wavelets and their Applications*, Chennai, India, Jan. 6 - 8, 2002, Eds: M. Krishna, R. Radha and S. Thangavelu, Allied Publishers Private Ltd. Chennai (2003), pp. 9-30.

28. With M. Bertola, *Symplectic Geometry of the Wigner Transform on Noncompact Symmetric Spaces*, in *Group24: Physical and Mathematical Aspects of Symmetries*, Proceedings of the 24th International Colloquium on Group Theoretical Methods in Physics, Paris, July 15-20, 2002, (Satellite Colloquium on Coherent States, Wavelets and Applications, held in Louvain la Neuve, July 10-12, 2002), Eds: J.-P. Gazeau, R. Kerner, J.-P. Antoine, S. Métens and J.-Y. Thibon, Institute of Physics Conference Series Number 173, Institute of Physics Publishing, Bristol and Philadelphia (2003), pp. 847-886.

29. With G.A. Goldin and R. Kerner, *Historical and epistemological aspects of group*

theory in physics, in *Group24: Physical and Mathematical Aspects of Symmetries*, Proceedings of the 24th International Colloquium on Group Theoretical Methods in Physics, Paris, July 15-20, 2002, (Special Plenary Session and Round Table, July 15, 2003), Eds: J.-P. Gazeau, R. Kerner, J.-P. Antoine, S. Métens and J.-Y. Thibon, Institute of Physics Conference Series Number 173, Institute of Physics Publishing, Bristol and Philadelphia (2003), pp. 171-172.

30. With A.L. Hohoueto, T. Kengatharam and J.-P. Antoine, *Lattices of coherent states and square integrability*, in *Group24: Physical and Mathematical Aspects of Symmetries*, Proceedings of the 24th International Colloquium on Group Theoretical Methods in Physics, Paris, July 15-20, 2002, Eds: J.-P. Gazeau, R. Kerner, J.-P. Antoine, S. Métens and J.-Y. Thibon, Institute of Physics Conference Series Number 173, Institute of Physics Publishing, Bristol and Philadelphia (2003), pp. 883-854.

31. *Vector coherent states over matrix domains*, in *Contemporary Problems in Mathematical Physics*, Proceedings of the Third International Workshop, Cotonou, Benin, 1-7 November, 2003, Eds: Jan Govaerts, M. Norbert Hounkonnou and Alfred Z. Msezane, World Scientific, Singapore (2005), pp. 375-383.

32. *Coherent states*, in *Encyclopedia of Mathematical Physics*, Eds., Jean Pierre Francoise, Gregory L. Naber and Tsou Sheung Tsun, Elsevier Academic Press (2006), pp. 19.

33. With M. Engliš, *Berezin-Toeplitz quantization over matrix domains*, in *Contributions in Mathematical Physics – A tribute to Gerard Emch*, Eds: S.T. Ali and K.B. Sinha, Hindustan Book Agency, New Delhi, India (2007).

7. Invited Conferences, Lectures and Visiting Professorships (since 1990)

- Guest lecturer at the Steklov Institute, Moscow, June 3-15, 1990.
- XVIII International Colloq. on Group Theoretical Methods in Physics, Moscow, June 1990.
- Visiting Professor, Arnold-Sommerfeld-Institut, Technische Universität Clausthal, Clausthal, Germany, Feb. - March, 1991.
- Seminar speaker at the Institut für Theoretische Physik, Universität Köln, Köln, Germany, March, 1991.
- Visiting Professor at the Chalmers University of Technology, Göteborg, Sweden, March, 1991.
- Visiting Professor, Laboratoire de Physique Théorique et Mathématique, Université Paris VII, Paris, June - July, 1991.

- Plenary speaker at the X-th Colloquium on Geometrical Methods in Physics, Bialowieza, Poland, June 23-30, 1991.
- Plenary speaker at the 2nd International Wigner Symposium, Goslar, Germany, July 16-20, 1991.
- Visiting Professor at the Institute of Physics, University of Warsaw at Bialystok, Bialystok, Poland, Dec. 1992.
- Invited participant at the Workshop on Mathematical Physics Towards the XXI-st Century, Ben Gurion University, Beer Sheva, Israel, March 14-19, 1993.
- Visiting Professor, Université Paris VII, Paris, June 1993.
- Invited speaker at the Institut für Theoretische Physik, Universität Wien, Dec. 14, 1993.
- Visiting Professor, Université Paris VII, June 1994.
- Invited speaker at the Department of Mathematics, University of Saskatoon, Nov. 2-7, 1994.
- Invited speaker at the Conference on Geometry and Mathematical Physics, Zlatograd, Bulgaria, Aug. 28 - Sep.2, 1995
- Guest speaker at the Universität Wien and Erwin Schrödinger Institut, Vienna, Feb. 20 and 23, 1996
- Visiting Professor at the Institute of Physics, University of Warsaw at Bialystok, Bialystok, Poland, Feb. 25 - March 10, 1996.
- Invited plenary speaker at the Workshop on Spline Functions and the Theory of Wavelets, Programme on Wavelets in Physics, at the CRM, Université de Montréal, March 25 - 29, 1996.
- Visiting Research Scholar at Edith Cowan University, Perth, Australia, May 20 - June 10, 1996.
- Seminar speaker at Murdoch University, Murdoch, Australia, June 3, 1996 and at the University of Western Australia, Perth, Australia, June 6, 1996.
- Invited speaker at the XV-th Colloquium on Geometrical Methods in Physics, Bialowieza, Poland, July 1 - 8, 1996.
- Invited speaker at the International Conference on Quantum Structures, Berlin, Germany, July 29 - Aug. 3, 1996

- Visiting Professor at the Facultad de Matemática y Computación, Universidad de la Habana, La Habana, Cuba, May 4 - 11, 1997.
- Invited speaker at the 5th International Conference on Squeezed States and Uncertainty Relations, Balatonfüred, Hungary, May 27 - 31, 1997.
- Visiting Professor, Arnold-Sommerfeld-Institut, Technische Universität Clausthal, Clausthal-Zellerfeld, Germany, July 11 - Aug. 10, 1997.
- Invited speaker at the 5th International Wigner Symposium, Vienna, Austria, Aug. 25-29, 1997.
- Visiting Professor at the University of Bialystok, Bialystok, Poland, Oct. 13 - Nov. 13, 1997.
- Invited seminar speaker at the Arnold Sommerfeld Institut, Technische Universität Clausthal, Clausthal-Zellerfeld, Germany, Oct. 28, 1997.
- Invited speaker at the Mathematical Institute, Oxford University, Oxford, England, Oct. 31, 1997.
- Invited speaker at the Department of Philosophy, Oxford University, Oxford, England, Oct. 31, 1997.
- Visiting Professor at the Institute of Physics, Rumanian Academy of Science, Bucharest, Rumania, Nov. 17 - 23, 1997.
- Visiting Professor at the Facultad de Matemática y Computación, Universidad de la Habana, La Habana, Cuba, Dec., 1997.
- Lecturer in the Workshop on Wavelets and Differential Equations, University of Havana, Cuba, April 27 - May 8, 1998.
- Visiting Professor at the Centro Internacionales Ciencias, Cuernavaca, Mexico, May, 1998.
- Invited speaker at the XVII-th Colloquium on Geometrical Methods in Physics, Bialowieza, Poland, June 28 - July 4, 1998.
- Invited speaker at the XXIIInd International Colloquium on Group Theoretical Methods in Physics, Hobart, Tasmania, July 13 - 18, 1998.
- Invited speaker at the Workshop on Wavelets and Applications in Physics and Astrophysics, Harvard University, Oct. 8 - 10, 1998.
- Invited participant to the symposium on the Conceptual Foundations of Field Theories in Physics, Annual Meeting of the History and Philosophy of Science Society, Kansas

City, Oct. 22-25, 1998.

– Visiting Lecturer at the Facultad de Matemática y Computación, Universidad de la Habana, La Habana, Cuba, Dec. 1998.

– Visiting Professor, Université Paris VII, July 1998 and Feb. 1999.

– Lecturer in the Workshop on Wavelets and Differential Equations, University of Havana, Cuba, April 26 - May 8, 1999.

– Visiting Scientist at the Centro Internacionales Ciencias, Cuernavaca, Mexico, June 1999.

– Invited plenary speaker at the international conference on Quantum Theory and Symmetries, Goslar, Germany, July 18 - 22, 1999.

– Plenary speaker at the Workshop on Aspects of Quantization, CRM, Université de Montréal, Sep. 23 - 28, 1999, held within the framework of the Theme Year: Mathematical Physics, 1999-2000.

– Invited plenary speaker at the Workshop on Contemporary Problems in Mathematical Physics, Université Nationale de Benin, Benin, West Africa, Oct. 31 - Nov. 5, 1999.

– Invited speaker at the Center for Theoretical Studies of Physical Systems, Clark Atlanta University, Atlanta, Ga, USA, Dec.12 - 17, 1999.

– Invited speaker at the Quantum Centennial Symposium, University of Saskatchewan, Saskatoon, Canada, March 17 - 18, 2000.

– Lecturer in the Third International Workshop on Wavelets, Quantization and Differential Equations, University of Havana, Cuba, May 2 - 5, 2000.

– Visiting Professor, Université Paris VII, June, 2000.

– Visiting Professor, Université National de Benin, Cotonou, Benin, June 5 - June 14, 2000.

– Invited seminar speaker at the Université de Lille, Lille, France, June 21, 2000.

– Invited speaker at the Special Session on Pseudodifferential Operators, Wavelets and Related Topics, AMS Central Sectional Meeting #957, Toronto, Sep. 23 - 24, 2000.

– Visiting Professor, Université Paris VII, Dec., 2000.

– Visiting Professor, Zentrum Mathematik der Technischen Universität, München, Germany, Feb. 2001.

- Lecturer in the Fourth International Workshop on Wavelets, Quantization and Partial Differential Equations, University of Havana, Cuba, May 7 - 11, 2001.
- Invited speaker at the XX-th Workshop on Geometrical Methods in Physics, Bialowieza, Poland, July 1 - 7, 2001.
- Invited speaker at the II Symposium on Quantum Theory and Symmetries, Cracow, Poland, July 18 - 21, 2001.
- Invited plenary speaker at the 3rd International Congress of the International Society for Analysis, its Applications and Computation, Berlin, Germany, Aug. 20 - 25, 2001.
- Invited plenary lecturer at the 2nd Workshop on Contemporary Problems in Mathematical Physics, Université Nationale de Benin, Benin, West Africa, Oct. 29 - Nov. 2, 2001.
- Invited plenary speaker at the International Conference and Instructional Workshop on Wavelets and their Applications, Anna University, Chennai (Madras), India, Jan. 4 - 8, 2002.
- Invited plenary speaker at the Satellite Colloquium (to the XXIV-th International Colloquium on Group Theoretical Methods in Physics, Paris), held in Louvain-la-Neuve, July 10-12, 2003.
- Invited speaker at the XXIV-th International Colloquium on Group Theoretical Methods in Physics, Paris, July 15-20, 2002.
- Invited speaker at the Special Session on Special Functions and q-series of the American Mathematical Society Winter Meeting, Baltimore, MD, Jan. 14 - 17, 2003.
- Visiting Professor, Université d'Abomey-Calavi, Porto-Novo, Benin, May 25 - June 2, 2003
- Invited lecturer at the Bimestre intensivo, organised by the Dipartimento di Matematica, Università di Torino and Politecnico di Torino, Italy, June 10 - 21, 2003
- Visiting professor, Department of Physics, University of Isfahan, Isfahan, Iran, August, 2003.
- Invited plenary lecturer at the 2nd Workshop on Contemporary Problems in Mathematical Physics, Université d'Abomey-Calavi, Porto-Novo, Benin, West Africa, Nov. 1 - 7, 2003.
- Lecturer at the International Workshop: Wavelets – Theory and Applications, University of Prince Edward Island, Charlottetown, PEI, April 26 – May 7, 2004.
- Visiting Professor, Czech Academy of Science, June 12 – 26, 2004.

- Invited plenary speaker at the Workshop on wavelets and their Applications, King Abdul Aziz City of science and Technology (KACST), Riyadh Saudi Arabia, Dec. 14, 2004.
- Invited lecturer at the International Conference on Operator Theory, Quantum Probability and Noncommutative Geometry, Kolkata, India, Dec. 20 – 23, 2004.
- Lecturer at the VIII International Workshop on Wavelets, Differential Equations and Quantization, University of Havana, Cuba, February 21 – 25 , 2005.
- Invited participant at the special semester on Modern Methods of Time-Frequency Analysis, SPRING 2005, the Erwin Schrödinger Institut, Vienna, Austria, May 30 – June 13, 2005.
- Invited plenary speaker at the Third Workshop on Wavelets and their Applications, Vali-e-Asr University of Rafsanjan, Rafsanjan, Iran, May 15 – 16, 2005.
- Invited seminar speaker at the Department of Mathematics, Ferdowsi University, Mashhad, Iran, May 19, 2005.
- Visiting Professor, Dipartimento di Metodi e Modelli Matematici, Facoltà di Ingegneria, Università di Palermo, Palermo, Italy, July 5 – 13, 2005.
- Invited speaker at the Banff International Workshop on Time-frequency Analysis and non-Stationalry Filtering, Banff, Alberta, Canada, Sep. 24 – 29, 2005.
- Scientific Consultant to the Université d'Abomey-Calavi, Porto-Novo, Benin, for the period Oct. 2005 - Dec. 2006, funded by the Abdus Salam International Centre for Theoretical Physics, Trieste, Italy.
- Invited plenary lecturer at the 3rd Workshop on Contemporary Problems in Mathematical Physics, Université d'Abomey-Calavi, Porto-Novo, Benin, West Africa, Nov. 5 - 11, 2005.
- Invited speaker at the International Workshop on Wavelets and the Theory of Quantum Finance, The Millennium University, Dhaka, Bangladesh, Dec. 5 – 11, 2005.
- Invited participant at the International Conference on Harmonic Analysis and Applications (8^o Encuentro Nacional de Analistas A.P. Calderón), Villa de Merlo, San Luis, Argentina, July 30 - Aug. 5, 2006.
- Invited seminar speaker at the Argentinian Institute of Mathematics, Buenos Aires, Aug. 11, 2006.
- Principal lecturer at the Second COPROMAPH International School, Cotonou, Benin, Dec. 11 - 16, 2006.

– Participant at the X-th International Workshop on Differential Equations, Number Theory, Data Analysis Methods and Geometry, University of Havana, Cuba, February 19 – 23 , 2007.

– Invited plenary speaker at the Workshop on Toeplitz Operator Theory and Deformation Quantization at the Centre for the Topology and Quantization of Moduli Spaces, Department of Mathematical Sciences, University of Aarhus, Denmark, March 26 - 30, 2007.

– Visiting Professor, Université Paris VII (Astroparticules et Cosmologie group), May 12 - 19, 2007.

– Invited seminar speaker at the Université de Lille, Lille, France, May 15, 2007.

– Visiting Professor, Czech Academy of Science, May 20 - 26, 2007.

– Invited seminar speaker at the Czech Academy of Science, May 22, 2007.

– Invited seminar speaker at the Czech Technical University, Prague, May 22, 2007.

– Invited speaker at the special session on Mathematical Physics of the CMS-MITACS Joint Conference, Winnipeg, May 31 - June 3, 2007.

– Invited plenary speaker at the conference on Operational Quantum Physics and the Quantum-Classical Contrast, Perimeter Institute for Theoretical Physics, Waterloo, June 4 - 7, 2007.

– Invited speaker at the at the XXVI-th Workshop on Geometrical Methods in Physics, Bialowieza, Poland, July 1 - 7, 2007.

– Visitor at the Steklov Institute, St. Petersburg, Russia, July 9 - 15, 2007.

8. Other Professional Activities

- Acted as a referee for the following international research journals:

- 1) Journal of Mathematical Physics, published by the American Institute of Physics.
- 2) Physical Review and Physical Review Letters, published by the American Institute of Physics
- 3) Journal of Physics, published by the Institute of Physics, U.K.
- 4) Foundations of Physics, published by Plenum Publishing Co.
- 5) Reviews in Mathematical Physics, published by World Scientific, Singapore.

- Acted as referee for NSERC, Canada, FQRNT, Québec and NSF, U.S.A.
- Also acted, at various times, as a referee for several research and text books in physics and mathematics published by Reidel, Addison-Wesley, Harper and Row and Academic Press.
- Chairman, Curriculum Committee, 1987-1988, Dept. of Math., Concordia University
- Cited in American Men and Women in Science, 1979 edition.
- Member, Canadian Math. Society.
- Served on the Organizing Committees for two international conferences on Differential Geometric Methods in Physics, held in Clausthal, August 1980 and July 1981
- Served on the Advisory Committee of the First International Conference on the Physics of Phase Space held in College Park, Md., U.S.A. May 1986.
- Chairman, Local Arrangements Committee, Canadian Math. Society Annual Winter Meeting, Concordia University, December 1989.
- Graduate Programme Director, Department of Mathematics and Statistics, Concordia University, Aug., 1991 – June, 1996 and July, 1999 – June, 2000.
- Member, ISM (Institut des Sciences Mathématiques) Steering Committee and Concordia University representative to the ISM, 1993 – present.
- Associate Member of the CRM, Université de Montréal, in June, 1995 – present.
- Member, Concordia University Graduate Fellowships and Scholarships Committee, Aug., 1999 – June 2002.
- Member, Concordia University Council of the School of Graduate Studies, Sep., 1999 – June 2003.
- Member, special committee appointed by the Dean of Arts and Science, Concordia University, to study the future of the Physics Department and to recommend measures for its restructuring, Sep. 2000 – June 2001.
- Member of the Organizing Committees for the XI-th, XII-th, XIII-th, XIV-th, XV-th, XVI-th, XVII-th, XVIII-th, XIX-th, XX-th, XXI-st, XXII-nd, XXIII-rd, XXIV-th, XXV-th and XXVI-th Colloquia on Geometrical Methods in Physics, Bialowieza, Poland, July 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006 and 2007.
- Member of the Organizing Committee for the international conference on New Insights in Quantum Mechanics, Goslar, Germany, Aug. 31 - Sep. 3, 1998.

- Member of the Organizing Committee for the 1st, 2nd, 3rd, 4th, 5th, 6th, 7th, 8th and 9th Workshops on Wavelets, Quantization and Partial Differential Equations, University of Havana, Cuba, April 27 - May 8, 1998, April 26 - May 8, 1999, May 2 - 5, 2000, May 7 - 11, 2001, Feb. 18 - 22, 2002, Feb. 17 - 21, 2003, Feb. 23 - 27, 2004, Feb. 21 - 25, Feb. 20 - 24, 2006 and Feb. 19 - 23, 2007.

- Co-organizer of the Workshop on Aspects of Quantization, CRM, Université de Montréal, Sep. 23 - 28, 1999, held within the framework of the Theme Year: Mathematical Physics, 1999-2000.

- Member of the International Advisory Committee for the International Colloquia on Group Theoretical Methods in Physics, Dec. 2000 - 2007.

- Member of the Conference Board of the international Symposia on Quantum Theory and Symmetries, Aug. 2001 - present.

- Presently working together with the Department of Mathematics and Statistics and the Centre for International Academic Cooperation, Concordia University, and the Universities of Havana, Cuba and Bialystok, Poland, for developing joint programmes of academic cooperation.

- Director, Institut des Sciences Mathématiques, Montréal, June 1, 2003 - May 31, 2006.

- Co-organizer of the International Workshop: Wavelets - Theory and Applications, University of Prince Edward Island, Charlottetown, PEI, April 26 - May 7, 2004.

- Co-organizer of the International Workshop on Wavelets and the Theory of Quantum Finance, The Millennium University, Dhaka, Bangladesh, Dec. 5 - 11, 2005.

- Member of the Standing Committee for the International Colloquia on Group Theoretical Methods in Physics, July 2007 - present.