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**Prof. Shyam L. Kalla -- Biographical Data**

Ph.D., D.Sc., F.N.A. (Arg.), FIMA (UK), Prof. of Appl. Mathematics

*Birthday:* January 4, 1938; *Birthplace:* Jodhpur, India*Degrees:*

1957 B.Sc. (Maths., Phys., Chem.), University of Rajasthan  
 1959 M.Sc. (Mathematics), University of Rajasthan  
 1968 Ph.D. (Mathematics), University of Rajasthan  
 1976

*Research & Teaching Fields:*

Special Functions, Integral Transforms, Fractional Calculus, Integral Equations, Differential Equations, Orthogonal Polynomials, Heat Transfer, Boundary Value Problems, Asymptotic Expansions, Mathematical Physics, Applied Mathematics

*Prize and Honours:*

- "Andres Bello Research Prize", LUZ, Venezuela, 1983-1984.
- "Fellow of the National Academy of Sciences", Argentina (since 1984).
- Investigator (III) Highest Level, SPI-CONICIT, 1990.
- "Fco. Bustamante Research Prize", Zulia University, Venezuela (1992).
- "Andress Bello Research Prize" LUZ, Venezuela, 1994
- Honorary Professor, Division of Mathematics, Institute per la Ricerca di Base (IRB), Monteroduni, Italy.

*Faculty Positions:*

- Present Position: Professor of Mathematics, Kuwait University
- July 1976 - : Professor of Applied Mathematics and Director, Center for Research in Applied Mathematics, (CIMA), Division de Post-Grado Facultad de Ingenieria, Universidad del Zulia, Maracaibo, Venezuela;
- February 1970 - June 1976: Professor of Mathematics, National University of Tucuman, Argentina;
- Sept. 1967 - Jan. 1970: Senior Research Fellow UGC, University of Jodhpur, India;
- July 1964 - Sept. 1967: Research Fellow, MR Engineering College, Jaipur, India;
- July 1959 - July 1964: Lecturer, Dept. Education, Rajasthan, India.

*Teaching & Research Experience:*

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More than 40 years of Research and Teaching Experience at Undergraduate and Graduate level. Supervisor of more than Thirty Graduate Theses, three doctoral dissertations and examiner of Doctoral Theses of several universities.

*Courses & Lectures (Graduate & Undergraduate levels):*

Special Functions, Integral Equations, Integral Transforms, Advanced Calculus, Differential Equations, Mathematical Methods, Applied Mathematics, Generalized Functions, Mathematical Physics, Applied Analysis, Fractional Calculus, Calculus, Topics in Applied Mathematics.

*Publications:*

*Author of more than 370 research papers,* published in different international journals and Science Citation indexed journals (List Enclosed at the end) *and 4 books and monographs.*

*Citations:*

Several books (among them, almost all recent books on fractional calculus, special functions and integral transforms) published in different countries (USA, UK, Japan, former USSR, Venezuela, Canada, India etc.) cite the research works of Prof. Kalla. Some authors (V. Kiryakova, 1994; S.G. Samko, A.A. Kilbas & O.I. Marichev, 1993; K.S. Miller & B. Ross, 1993; Y. Luchko & S.B. Yakubovich, 1994) cite and acknowledge the work of Prof. Kalla in the Preface/Introduction of their books. Citations of Prof. Kalla's results in recent research papers in estimated journals with IF, in the same field, are quite frequent.

*Member of Editorial Boards of Research Journals:*

1. Revista Technica, Facultad de Ingenieria, Universidad del Zulia (Founding Editor 1978), National Prize CONICIT - 1988, Venezuela;
2. Journal of Rajasthan Academy of Physical Sciences;
3. Hadronic Journal, USA;

4. IJAMS-International Journal of Applied Mathematical Sciences;
5. IJPAMS - International Journal of Pure and Applied Mathematical Sciences;
6. GJMMS-Global Journal of Mathematics and Mathematical Sciences;
7. Integral Transforms and Special Functions, UK;
8. Journal of Fractional Calculus, Japan;
9. Kuwait Journal of Science and Engineering (International Advisory Board);
10. FCAA - Fractional Calculus and Applied Analysis;
11. IJAM - International Journal of Applied Mathematics;
12. IJMMS – International Journal of Mathematics and Mathematical Sciences, USA;
13. International Journal of Optimization Theory and Applications;
14. IJCAM - International Journal of Computational and Applied Mathematics;
15. IJMM - International Journal of Modern Mathematics;
16. Boll. of Pure and Applied Mathematics;
17. Algebras, Groups and Geometry.

*Funded Research from Several Organizations:*

OAS - Washington, CONICIT - Venezuela, CONDES - Venezuela, FONINVE - Venezuela, Research Administration - Kuwait.

*Visiting Professor:*

1. ICTP, Trieste, Italy, 1974, 1976, 1985.
2. University of Zurich, Switzerland, 1976.
3. National Academy of Science, Lodz, Poland 1979.
4. Bulgarian Academy of Science, Sofia - Bulgaria 1981, 1985, 1987, 1990, 1993, 1996, 2003.
5. Kuwait University, 1984, 1987-88, 1989.
6. Nihon University, Koriyama, Japan, 1989.
7. University of Innsbruck, Austria 1990.
8. National Academy of Sciences, Buenos Aires, Argentina, 1992.
9. University of Central Florida, Orlando, FL., USA Jan-Sept. 2001.
10. University of Karlsruhe, Germany, September 2003.
11. University of Jodhpur, India December 2004.

12. University of Karlsruhe, Germany, April 2007. 123

*Member Professional and Academic Institutions:*

1. National Academy of Sciences, Buenos Aires, Argentina (Fellow).
2. Institute of Mathematics and its Applications, UK (Fellow).
3. ASOVAC, Venezuela. Assoc. for Advancement of Science.
4. Indian Sciences Congress.
5. American Mathematical Society, U.S.A.

*Invited Lecturer at Many International Conferences in:*

Venezuela, Argentina, Italy, Poland, Bulgaria, Japan, Kuwait, Lebanon, UAE, USA, India, etc.

*Co-chairmen of:*

the International Workshops "Transform Methods and Special Functions" (Bulgaria, 1994, 1996, 1999, 2003).

*Supervision of Ph.D. Theses:*

1. Dr. Leda Galue: "Avances sobre formas generalizadas de funciones de Bessel y sus aplicaciones", January 2000.
2. Dr. Susana Salinas de Romero: "Metodos del calculo fraccional y sus Aplicaciones", June 2000.
3. Dr. Josefina Matera: "Funciones hipergeometricas generalizadas y sus aplicaciones", February 2002.

**Books & Monographs:**

1. S.L. Kalla, S. Conde, *Some Results on Orthogonal Polynomials*, Universidad del Zulia, 1985.
2. S. Conde, S.L. Kalla, *A Table of Gauss Hypergeometric Functions*, LUZ, 1979.
3. S. Conde, S.L. Kalla, *Tables of Bessel Functions and Roots of Related Transcendental Equations*, Univ. Zulia, UMT File, AMS, USA, 1980.
4. S.L. Kalla, V.K. Tuan, B. Al-Saqabi, M. Al-Zanaidi and A. Al-Zamel, *Applied Mathematical Analysis*, Kuwait University, 1998.

124 **List of Selected Publications (of all) 370 of Prof. S. L. Kalla:**

*Articles in Scientific Journals (Incomplete List, according to <http://www.hindawi.com/63891294.html>), in reverse order:*

1. [Fractional extensions of the temperature field problems in oil strata](#), Applied Mathematics and Computation, vol. 186, no. 1, pp. 35–44, 2007
2. [On a generalized finite Hankel transform](#), Applied Mathematics and Computation, vol. 190, no. 1, pp. 705–711, 2007
3. [On a unified mixture distribution](#), Applied Mathematics and Computation, vol. 182, no. 1, pp. 325–332, 2006
4. [On a generalized mixture distribution](#), Applied Mathematics and Computation, vol. 169, no. 2, pp. 943–952, 2005
5. [A generalization of beta-type distribution involving  \$\omega\$ -Lauricella function in several variables](#), Integral Transforms and Special Functions, vol. 16, no. 8, pp. 691–705, 2005
6. [Solution of Volterra-type integro-differential equations with a generalized Lauricella confluent hypergeometric function in the kernels](#), International Journal of Mathematics and Mathematical Sciences, vol. 2005, no. 8, pp. 1155–1170, 2005
7. [On the Lauwerier formulation of the temperature field problem in oil strata](#), International Journal of Mathematics and Mathematical Sciences, vol. 2005, no. 10, pp. 1577–1588, 2005
8. [Some results on a generalized  \$\omega\$ -Jacobi transform](#), International Journal of Mathematics and Mathematical Sciences, vol. 2004, no. 63, pp. 3379–3387, 2004
9. [An embedding theorem of Sobolev type](#), Integral Transforms and Special Functions, vol. 15, no. 4, pp. 369–374, 2004
10. [A series approximation for disk galaxies by means of the Epstein-Hubbell integral](#), Mathematical and Computer Modelling, vol. 40, no. 5-6, pp. 611–626, 2004
11. [Further results on generalized hypergeometric functions](#), Applied Mathematics and Computation, vol. 136, no. 1, pp. 17–25, 2003
12. [On a fractional generalization of the free electron laser equation](#), Applied Mathematics and Computation, vol. 143, no. 1, pp. 89–97, 2003

13. [Some boundary value problems of temperature fields in oil strata](#), Applied Mathematics and Computation, vol. 146, no. 1, pp. 105–119, 2003
14. [Unified probability density function involving a confluent hypergeometric function of two variables](#), Applied Mathematics and Computation, vol. 146, no. 1, pp. 135–152, 2003
15. [A generalization of beta-type distribution with Y -Appell function](#), Integral Transforms and Special Functions, vol. 14, no. 4, pp. 321–332, 2003
16. [Analytical investigations of the Sumudu transform and applications to integral production equations](#), Mathematical Problems in Engineering, vol. 2003, no. 3, pp. 103–118, 2003
17. [A generalized beta function and associated probability density](#), International Journal of Mathematics and Mathematical Sciences, vol. 30, no. 8, pp. 467–478, 2002
18. [On hypergeometric generalized negative binomial distribution](#), International Journal of Mathematics and Mathematical Sciences, vol. 29, no. 12, pp. 727–736, 2002
19. [Acta Applicandae Mathematicae, vol. 74, no. 1, pp. 35–55, 2002](#)
20. [Operational calculus approach to PDE arising in QR-regularisation of ill-posed problems](#), Mathematical and Computer Modelling, vol. 35, no. 7-8, pp. 835–848, 2002
21. [Solutions of fractional multi-order integral and differential equations using a Poisson-type transform](#), J.of Mathematical Analysis and Applications, vol. 269, no. 1, pp. 172–199, 2002
22. [Study of a class of generalized elliptic type integrals](#), Applied Mathematics and Computation, vol. 131, no. 2-3, pp. 607–613, 2002
23. [A unified form of gamma-type distributions](#), Applied Mathematics and Computation, vol. 118, no. 2-3, pp. 175–187, 2001
24. [Some results on a generalized hypergeometric function](#), Integral Transforms and Special Functions, vol. 12, no. 1, pp. 89–100, 2001
25. [A generalized inverse gaussian distribution with  \$\tau\$ -confluent hypergeometric function](#), Integral Transforms and Special Functions, vol. 12, no. 2, pp. 101–114, 2001

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26. [On a generalized fractional intero-differential equation of volterra-type.](#) Integral Transforms and Special Functions, vol. 9, no. 2, pp. 81–90, 2000
27. [Composition of erdélyi-kober fractional operators.](#) Integral Transf. and Special Functions, vol. 9, no. 3, pp. 185–196, 2000
28. [Generalized elliptic-type integrals and asymptotic formulas.](#) Applied Mathematics and Computation, vol. 114, no. 1, pp. 13–25, 2000
29. [Multiplication theorems for generalized and double-index Bessel functions.](#) Journal of Computational and Applied Mathematics, vol. 118, no. 1-2, pp. 143–150, 2000
30. [Energy behaviour of neutrons generated by Witch-type distributed axi-symmetrical deuteron beams accelerated onto plane tritium targets.](#) Applied Radiation and Isotopes, vol. 53, no. 4-5, pp. 793–799, 2000
31. [On the low order approximation of radiation fields generated by some hollow-cylindrical ion beams accelerated to produce exoergic nuclear reactions.](#) Applied Radiation and Isotopes, vol. 53, no. 4-5, pp. 953–961, 2000
32. [Tau method approximation of the Hubbell rectangular source integral.](#) Radiation Physics and Chemistry, vol. 59, no. 1, pp. 17–21, 2000
33. [On a generalized secant integral.](#) Radiation Physics and Chemistry, vol. 59, no. 3, pp. 281–285, 2000
34. [A time dependent model for the transport of heavy pollutants from ground-level aerial sources.](#) Applied Mathematics and Computation, vol. 105, no. 1, pp. 91–99, 1999
35. [Some Sonine-Gegenbauer type integrals.](#) Computers & Mathematics with Applications, vol. 38, no. 3-4, pp. 73–83, 1999
36. [Further results on a generalized gamma function occurring in diffraction theory.](#) Integral Transforms and Special Functions, vol. 7, no. 3, pp. 175–190, 1998
37. [On some fractional order integral transforms generated by orthogonal polynomials.](#) Applied Mathematics and Computation, vol. 91, no. 2-3, pp. 209–219, 1998

38. [A fractional integro-differential equation of Volterra type.](#) Mathematical and Computer Modelling, vol. 28, no. 10, pp. 103–113, 1998
39. [A partial differential equation related to a problem in atmospheric pollution.](#) Mathematical and Computer Modelling, vol. 28, no. 12, pp. 1–6, 1998
40. [Analytical and numerical treatment of a fractional integro-differential equation of Volterra-type.](#) Mathematical and Computer Modelling, vol. 25, no. 12, pp. 1–9, 1997
41. [Solution of a diffusion of dust problem in terms of hypergeometric functions.](#) Mathematical and Computer Modelling, vol. 26, no. 3, pp. 87–93, 1997
42. [Asymptotic expansions for generalized gamma and incomplete gamma functions.](#) Applicable Analysis, vol. 66, no. 1, pp. 173–187, 1997
43. [Tau method approximation of some integrals related to radiation field problems.](#) Computers & Mathematics with Applications, vol. 33, no. 5, pp. 21–27, 1997
44. [A generalized gamma distribution and its application in reliability.](#) Communications in Statistics - Theory and Methods, vol. 25, no. 1, pp. 201–210, 1996
45. [Some generalised radiation field integrals.](#) Computers & Mathematics with Applications, vol. 32, no. 12, pp. 121–128, 1996
46. [An application of fractional calculus to the solution of a general class of differintegral equations.](#) Applied Mathematics and Computation, vol. 77, no. 2-3, pp. 137–152, 1996
47. [Epstein-Hubbell elliptic type integral and its generalizations.](#) Applied Mathematics and Computation, vol. 77, no. 1, pp. 9–32, 1996
48. [Asymptotic formulas for generalized elliptic-type integrals.](#) Computers & Mathematics with Applications, vol. 32, no. 4, pp. 49–55, 1996



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49. [Fractional Calculus and the Sums of Certain Families of Infinite Series](#), J. of Mathematical Analysis and Applications, vol. 190, no. 3, pp. 738–754, 1995
50. [Algorithms for the approximation of the generalized Hubbell rectangular source integrals](#), Radiation Physics and Chemistry, vol. 43, no. 5, pp. 497–502, 1994
51. [The Hubbell rectangular source integral and its generalizations](#), Rad. Phys. and Chemistry, vol. 41, no. 4-5, pp. 775–781, 1993
52. [On a new approach to convolution constructions](#), Intern. J. of Mathematics and Math. Sci., vol. 16, no. 3, pp. 435–448, 1993
53. [Uniform asymptotic expansions of a class of incomplete cylindrical functions](#), Journal of Computational and Applied Mathematics, vol. 44, no. 1, pp. 121–130, 1992
54. [Some expansions related to the Hubbell rectangular-source integral](#), Journal of Computational and Applied Mathematics, vol. 37, no. 1-3, pp. 273–285, 1991
55. [Uniform asymptotic expansions of a class of integrals with finite endpoints of integration on the same path of steepest descent and with nearby saddle points](#), Journal of Computational and Applied Mathematics, vol. 35, no. 1-3, pp. 297–301, 1991
56. [A certain family of infinite series associated with Digamma functions](#), J. of Mathematical Analysis and Applications, vol. 159, no. 2, pp. 361–372, 1991
57. [Further results on generalized elliptic-type integrals](#), Applicable Analysis, vol. 25, no. 4, pp. 269–274, 1987
58. [Some results on generalized elliptic-type integrals](#), Applicable Analysis, vol. 22, no. 3, pp. 273–287, 1986
59. [Integrals of Jacobi functions](#), Mathematics of Computation, vol. 38, no. 157, p. 207, 1982
60. [A note on a short table of the generalized hypergeometric distribution](#), Metrika, vol. 28, no. 1, pp. 197–201, 1981
61. [The  \$v\$ -Zeros of  \$J\_{-v}\(x\)\$](#) , Mathematics of Computation, vol. 33, no. 145, p. 423, 1979
62. [Integral operators involving hypergeometric functions](#), Mathematische Zeitschrift, vol. 108, no. 3, pp. 231–234, 1969.