ANNUAL REPORT 07-08

Department of Mathematics and Statistics, Indian Institute of Technology, Kanpur

1. New courses developed

2. Books and book-chapters published

1. M. Banerjee, S. Mitra and A. Anand, Feature selection using rough sets, in Multi-Objective Machine Learning, Editor Yaochu Jin, Series on Studies in Computational Intelligence-16, 3-20 Springer, 2008.

2. C. R. Rao, H. Toutenburg, Shalabh and C. Heumann, Linear Models and Generalizations - Least Squares and Alternatives, Springer, 2008.

3. Research papers published in journals

1. Pseudo almost periodic mild solutions of retarded functional differential equations, Glob. J. Pure Appl. Math., 3(1) (2007), 27–36, D. Bahuguna and S. Abbas.

2. Second-order integrodifferential equation with nonautonomous operators, Differential Integral Equations, 20(6) (2007), 681–692, D. Bahuguna, D. N. Pandey and A. Ujlayan.

3. Evolutionary-rough feature selection in gene expression data, IEEE Transactions on Systems, Man, and Cybernetics, Part C: Applications and Reviews, 37(4) (2007), 622-631, M. Banerjee, S. Mitra and H. Banka.

4. Rough dialogue and implication lattices, Fundamenta Informaticae, 75(1-4) (2007), 123-139, M. K. Chakraborty and M. Banerjee.

5. Mathematical Modeling of the survival of biological species in polluted water bodies, Differential Equations and Dynamical Systems, 15(3&4) (2007), 209-230, J. B. Shukla, A. K. Misra and Peeyush Chandra.

6. Modeling and Analysis of the algal bloom in a lake caused by discharge of nutrients, Applied Mathematics and Computation 196, (2008), 782-790, J. B. Shukla, A. K. Misra, Peeyush Chandra.

7. Preconditioners for spectral element methods for elliptic and parabolic problems, Journal of Computational and Applied Mathematics, 215 (2008), 152-166, P. Dutt, P. Biswas and G. Nagaraju.

8. New necessary optimality conditions in optimistic bilevel programming, Optimization, 56 (2007), 577-604, S. Dempe, J. Dutta and B. S. Mordukhovich.

9. Gyrotactic bioconvection in three dimensions, Physics of Fluids, 19 (2007), 054107, S. Ghorai and N. A. Hill.

10. Feature extraction and classification using statistical networks, International Journal of Pattern Recognition and Artificial Intelligence, 21(7), (2007), 1103-1126, A. K.Ghosh and S. Bose.

11. On Certain Type of Modular Sequence Spaces, Turkish Jour. Math., 31 (2007), 1-11, M. Gupta and S. Pradhan.

12. Efficient High Resolution Relaxation Schemes for Hyperbolic Systems of Conservation Laws, International Journal of Numerical Methods in Fluids, 55(5), (2007), 483-507, M. K. Kadalbajoo and R. Kumar.

13. Geometric Mesh FDM for Self-adjoint Singular Perturbation Boundary Value Problems, Applied Mathematics and Computation, 190(2), (2007), 1646-1656, M. K. Kadalbajoo and D. Kumar.

14. Estimating the parameters of chirp signals in stationary noise, Statistica Sinica, 18(1) (2008), 187 - 201, D. Kundu and S. Nandi.

15. On hybrid censored Weibull distribution, Journal of the Statistical Planning and Inference,137 (2007), 2127-2142, D. Kundu.

16. Discriminating between the Log-Normal and Generalized Rayleigh Distributions, Statistics, 41(6) (2007), 505-515, D. Kundu and M. Z. Raqab
.
17. Sequential estimation of the sum of sinusoidal model parameters, Journal of Statistical Planning and Inference, 138(5) (2008), 1297-1313, A. Prasad, D. Kundu, and A. Mitra.

18. Bayes estimators for reliability measures in geometric distribution model using masked system life test data, Computational Statistics and Data Analysis, 52, (2008), 1821-1836, D. Kundu and A. Sarhan.

19. Generalized exponential distribution: Bayesian Estimation, Computational Statistics and Data Analysis, 52 (2007), 1873-1883, R. D. Gupta and D. Kundu.

20. On the hazard function of Birnbaum-Saunders distribution and associated inference, Computational Statistics and Data Analysis, 52, (2008), 2692-2702, D. Kundu, N. Kannan and N. Balakrishnan.

21. Cubic Spline Coalescence Fractal Interpolation Through Moments, Fractals, 15(1) (2007), 41-53, A. K. B. Chand and G. P. Kapoor.

22. Dynamics of Transcendental Meromorphic Functions $(z+\mu)\exp(z)/(z+\mu+4)$, having Rational Schwarzian Derivatives, Dynamical Systems, 22(3) (2007), 323-337, G.P. Kapoor and M. Sajid.

23. Coefficient Estimates for Inverse of Starlike Functions of Positive Order, J. Math. Anal. Appl., 329(2) (2007), 922-934, G. P. Kapoor and A. K. Mishra.

24. Smoothness Analysis of Coalescence Hidden Variable Fractal Interpolation Functions,International J. Nonlinear Science, 3(1) (2007), 15-26, A. K. B. Chand and G. P.Kapoor.

25. The effect on the algebraic connectivity of a tree by grafting or collapsing of edges, Linear Algebra and Its Applications, 428(4), (2008), 855-864, A. K. Lal and K. L.Patra.

26. Maximizing Laplacian spectral radius over trees with fixed diameter, Linear Multilinear Algebra, 55(5), (2007), 457-461, A. K. Lal and K. L. Patra.

27. On Fuglede's Conjecture for three Intervals, arXiv.0803.0049v1, (2008), Debashish Bose, C .P. Anil Kumar, R. Krishnan, Shobha Madan.

28. Prime Submodules in Multiplication Modules, International Journal of Algebra, 1(8) (2007), 375-380, A. Gaur, A. K. Maloo and A. Parkash.

29. Structure of Maximally Differential Graded Ideals in Positive Characteristic, Communications in Algebra, 36(2) (2008), 680-685, A. K. Maloo.

30. Maximally differential graded ideals in zero characteristic, Hiroshima Math. J., 38 (2008), 31-35, A. Gaur and A. K. Maloo.

31. Predictability of Indian Foreign Exchange Rates with Wavelet Filtering and Artificial Intelligence Modeling, The ICFAI Journal of Applied Finance, 13(4), (2007), 31-49, S. Mitra.

32. A general energy formula, Math. Scand., 101(1) (2007), 29-47, K. Hare, P. Mohanty and M. Rogniskaya.

33. A note on oscillations of implicit differential equations, Diff. Eqs. Dyn. Systs., 15 (2007), 49-60, J. Tyagi and V. Raghavendra.

34. A note on a generalization of Sturm's comparison theorem, Non. Dyn. Syst. Theory, 8, (2008), 1-4, J. Tyagi and V. Raghavendra.

35. Numerical Prediction of Fluid Flow and Heat Transfer in the Target System of an Axisymmetric Accelerator-Driven Subcritical System, ASME J. Heat Transfer, 129, (2007), 582. K. Arul Prakash, G. Biswas and B. V. Rathish Kumar.

36. Influence of variable heat flux on natural convection along a corrugated wall in porous media, Communications in Nonlinear Science and Numerical Simulation, 12(8), (2007),1454-1463, Shalini, B. V. Rathish Kumar.

37. Error Estimates for time accurate wavelet based schemes for hyperbolic differential equations, Int. J. Wavelets, Multiresultion Analysis and Informatics, 5(4), (2007),667-678, Mani Mehra and B. V. Rathish Kumar.

38. Increased cortical anisotropy in Neonatal Meningitis-An indicator of meningeal inflammation,Neuroradiology, 49, (2007), 767-75, R. Trivedi, G. K. Malik, R. K. Gupta, A. Gupta, K. Nath, K. N. Prasad, A. Purwar, D. Rathore, R. K. S. Rathore, P. A. Narayana.

39. Quantification of Physiological and Hemodynamic Indices Using T1 Dynamic Contrast-Enhanced MRI in Intracranial Mass Lesions, J. Magn. Reson. Imaging, 26, (2007),871-880, Anup Singh, Mohammad Haris, Divya Rathore, Ankur Purwar, Manoj Sarma, Getaneh Bayu, Nuzhat Husain, Ram K. Singh Rathore, and Rakesh K. Gupta.

40. Relative Cerebral Blood Volume is a Measure of Angiogenesis in Brain Tuberculoma, JComput Assist Tomogr, 31(3), (2007), 335-341, Rakesh K.

Gupta,Mohammad Haris,Nuzhat Husain, Mazhar Hussain, Kashi N. Prasad, Mohan Pauliah, Chhitiz Srivastava,Mukesh Tripathi, Manu Rastogi, Sanjay Behari, Anup Singh, Divya Rathore,and Ram Kishore S. Rathore.

41. Approximation by K-finite functions in L_p spaces, Israel Journal of Mathematics,161, (2007), 187-207, E. K. Narayanan, R. Rawat and S. K. Ray.

42. A Sharp Upper bound for the first eigenvalue of the Laplacian of compact hypersurfaces in rank-1 symmetric spaces, Proceedings of Indian Academy of Sciences (Mathematics),117 (2007), 307-315, G. Santhanam.

43. Consistent Estimation of Regression Coefficient Through Weighted Arithmetic Mean of Inconsistent Estimators in Replicated Ultrastructural Model, Communications in Statistics (Theory and Methods), 36(5) (2007), 955-960, Shalabh and Pen-Hwang Liau.

44. Improving the Estimation of Incomplete Regression Models through Pilot Investigations and Repeated Studies, Journal of Applied Statistical Science, 16(1), (2007),127-145,H. Toutenburg and Shalabh.

45. On the Estimation of the Linear Relation when the Error Variances are known, Computational Statistics and Data Analysis, 52 (2007), 1143 -1148, H. Schneeweiss and Shalabh.

46. Restricted Regression Estimation in Measurement Error Models, Computational Statistics and Data Analysis, 52 (2007), 1149 -1166, Shalabh, G. Garg and N. Misra.

47. Estimation of population mean through estimated coefficient of variation, Journal of Applied Statistical Science, 154 (2007), 425-429, H. P. Singh and Shalabh.

48. Risk Performance of Stein-Rule Estimators over the Least Squares Estimators of Regression Coefficients under Quadratic Loss Structures, Journal of Statistical Studies (Invited paper for the special issue in honor of 75th birthday of Professor A.K.Md.E. Saleh), 26, 97-103, Shalabh, H. Toutenburg and C. Heumann.

49. A Class of Estimators of Regression Coefficient for Sign Change Problem in Measurement Error Models, Journal of Statistical Research, 41(2), 63-72, Shalabh and Alan Wan.

4. Research Papers Published In Conference Proceedings

1. A categorial basis for granular computing, LNAI 4482, Proc. Rough Sets, Fuzzy Sets, Data Mining and Granular Computing (RSFDGrC 2007), May, 2007, Toronto, Canada, Eds. An, A. et al. (Springer-Verlag), 427-434, M. Banerjee and Y. Yao.

2. Some Non-Stationary subdivision Schemes, IEEE proceedings on Geometric Modeling and Imaging, (2007), 33-38, S. Daniel and P. Shunmugaraj.

3. On Kolmogorov Numbers of Matrix Transformations, de Gruyter Proceedings in Mathematics, Berlin, New York (2007), 219-228, L. R. Acharya and M. Gupta.

4. Segmentation of Gd-DTPA Enhancing Lesion of Brain using Time to Peak of Concentration Time Curve and its Pharmacokinetic Analysis in DCE-MRI. Proceedings of International Society of Magnetic Resonance in Medicine 15, Berlin Germany, 3512, (2007), A. Singh, R. K. S. Rathore, R. K. Gupta, M. Haris, D. Rathore, S. Verma, Ankur Purwar, G. Bayu, M. K. Sarma, J. Singh.

5. Fitting of the Piecewise Linear Function to Signal Intensity Time Curve and Its Application in Improving the Analysis of Concentration Time Curve of DCE-MRI Data. Proceedings of International Society of Magnetic Resonance in Medicine 15, BerlinGermany, 2240, (2007), A. Singh, R. K. S. Rathore, R. K. Gupta, M. Haris, D. K. S. Rathore, S. K. Verma, Ankur Purwar, G. Bayu, Manoj K. Sarma, J. K. Singh.

6. Differentiation of Infective from Neoplastic Brain Lesions by Dynamic Contrast Enhanced MRI, Proc. Intl. Soc. Mag. Reson. Med. 15, Berlin Germany, 840, (2007),M. Haris, R. K. Gupta, A. Singh, D. S. Rathore, N. Husain, M. Husain, C. M. Pandey,C. Srivastava, S. Behari, U. Singhal, R. K. S. Rathore.

7. Serial Dynamic Contrast Enhanced MR Imaging to Quantify treatment Induced Temporal Changes in Brain Tuberculomas.I, Proc. Intl. Soc. Mag. Reson. Med. 15,Berlin Germany 518, (2007), M. Haris, R. K. Gupta, A. Singh, D. S. Rathore, N.Husain, M. Husain, C. M. Pandey, C. Srivastava, S. Behari, U. Singhal, R. K. S.Rathore.

8. The Effect of Radiation on Normal Appearing Gray andWhite Matter after Treatment for Low Grade Gliomas using Dynamic Contrast Enhanced MRI, Proc. Intl. Soc.Mag. Reson. Med. 15, Berlin Germany, 3481, (2007), M. Haris, S. Sapru, K. J. M.Das, A. Singh, M. K. Raj, D. S. Rathore, S. Kumar, R. K. S. Rathore, R. K. Gupta.

9. Changes in DTI Metrics in Normal Appearing White Matter and Gray Matter afte Radiotherapy in Patients with Low Grade Glioma. Proceedings of International Society of Magnetic Resonance in Medicine 15, Berlin Germany, 3529, (2007), M. Haris,Sapru, K. J. Das, M. Raj, Ankur Purwar, D. Rathore, S. Kumar, R. K. S. Rathore,R. K. Gupta.

10. Radiation Induced Changes in Perfusion Metrics in Low Grade Glioma using Dynamic Contrast Enhanced MRI. Proc. Intl. Soc. Mag. Reson. Med. 15, Berlin Germany, 3509, (2007), M. Haris, S. Sapru, K. J. M Das, A. Singh, M. K. Raj, D. S. Rathore, S. Kumar, R. K. S. Rathore, R. K. Gupta.

11. Segmentation of Abdominal Fat in MR Images. Proceedings of International Society of Magnetic Resonance in Medicine 15, Berlin Germany, 3825, (2007), J. Singh, R. K. S. Rathore, R. K. Gupta, M. Thomas, Eesh Bhatia, Manoj Sarma, Ankur Purwar, G. Bayu, D. Rathore, S. Verma, A. Singh,.

12. Diffusion Tensor Imaging of Auditory Neural Pathway in Patients with Sensori-neural Hearing Loss. Proceedings of International Society of Magnetic Resonance in Medicine 15, Berlin Germany, 3513, (2007), K. Nath, R. Syal, M. Haris, A. Goyal, Ankur Purwar, D. Rathore, R. K. S. Rathore, R. Gupta.

13. Diffusion Tensor Imaging in Patients with Fulminant Hepatic Failure. Proceedings of International Society of Magnetic Resonance in Medicine 15, Berlin Germany, 352 (2007), K. Nath, R. Gupta, R. Trivedi, V. Rai, R. Yellapu, V. Saraswat, Ankur Purwar, D. Rathore, R. K. S. Rathore.

14. Diffusion tensor imaging in Patients with Acute-on-chronic liver failure. Proceedings of International Society of Magnetic Resonance in Medicine 15, Berlin Germany, 3544, (2007), K. Nath, R. K. Gupta, R. Trivedi, R .Yellapu, V. Rai, V. Saraswat, Ankur Purwar, D. Rathore, R. K. S. Rathore.

15. Probing Microvascularity and Heterogeneity of Human Glioma using Improved T1 weighted Dynamic contrast enhanced MRI. Proc. Intl. Soc. Mag. Reson. Med. 15, Berlin Germany, 2241, (2007), M. Pauliah, V. Saxena, M. Haris, N. Husain, R. K. S. Rathore, R. K. Gupta.

16. Increased cortical anisotropy in Neonatal Meningitis-An indicator of meningeal inflammation. Proceedings of International Society of Magnetic Resonance in Medicine 15, Berlin Germany, 3576, (2007), R. Trivedi, G. Malik, R. K. Gupta, A. Gupta, K.Nath, K. Prasad, Ankur Purwar, D. Rathore, R. K. S. Rathore, P. A. Narayana.

17. Necessary and Sufficient Conditions for the DTI Admissibility. Proceedings of International Society of Magnetic Resonance in Medicine 15, Berlin Germany, 1509, (2007), R. K. S. Rathore.

18. Retrograde Wallerian Degeneration of Cranial Corticospinal Tracts in Cervical Spinal Cord Injury Patients using Diffusion Tensor Imaging. Proceedings of International Society of Magnetic Resonance in Medicine 15, Berlin Germany, 3526, (2007), S. Guleria, R. Gupta, S. Saxena, A. Chandra, Ankur Purwar, D. Rathore, M. Husain,R. K. S. Rathore, P. A. Narayana.

19. Cerebellar White Matter Development Lags Supratentorial White Matter. Proceedings of International Society of Magnetic Resonance in Medicine 15, Berlin Germany, 1581, (2007), S. Saxena, R. K. Gupta, G. K. Malik, N. Husain, R. Trivedi, D. K. S. Rathore, Ankur Purwar, R. K. S. Rathore, P. A. Narayana.

20. A software Tool for Comprehensive Analysis of 1D and 2D NMR Data, Proceedings of 16th Triennial Conference for the International Society of Magnetic Resonance (ISMAR), Kenting, Taiwan October 14-19, (2007), M. K. Sarma, R. K. S. Rathore,R. K. Gupta, M. A. Thomas, A. Purwar, D. Rathore, G. Bayu, J. K. Singh, A. Singh, S. Verma.

5. Seminars and invited talks presented

1. Delivered 12 lectures in Sponsered Traning Program, Uttaranchal Council of Science and Technology, Puari, June 3-16, 2007, D. Bahuguna

2. Delivered the talk Logics from Rough Sets, IRIT, Universite Paul Sabatier, France, May 2007, M. Banerjee.

3. Delivered the talk On Orlicz Spaces of Entire Functions, Department of Mathematics, Jammu University, Jammu, September 2007, M. Gupta.

4. Delivered two invited talks, Department of Mathematics And Computer Science, Sri Satys Sai Institute of Higher Learning, Puttaparthi, September, 2007, M. K. Kadalbajoo.

5. Delivered two invited talks, Centre of Advanced Study, Department of Mathematics,

Punjab University, Chandigarh, December 7-11, 2007, M. K. Kadalbajoo.
6. Systems Science Centre, Portland State University, Portland, USA, June 8, 2007. Delivered the invited talk Fractal Modeling: Simulation and Prediction, G. P. Kapoor.

7. Delivered the talk On Carleson's Theorem, Prof. Ramnath Mohanty Memorial Lecture, Orissa Mathematical Society, Cuttack, January 2008, S. Madan.

8. Delivered the talk, The Poisson Summation Formula, Ravenshaw University, Orissa, March 2008, S. Madan.

9. Delivered the talk, On Fuglede's Conjecture for Three Intervals, IMSc, Chennai, March 2008, S. Madan.

10. Delivered the talk Bilinear Multipliers, Institute of Mathematics and Application, Bhubaneshwar, November 7, 2007, P. Mohanty.

11. Delivered the talk e is transcendental, Institute of Mathematics and Application, Bhubaneshwar, November 8, 2007, P. Mohanty.

12. Delivered the talk Wavelets in PDES, LTI, CRP-HT-Research Center, 29 J. F. Kennedy Av, Luxembourg, June 11, 2007, B. V. Rathish Kumar.

13. Delivered the talk An overview of Finite Element Analysis in ADSS, ISFM, Loius Pasteur University, Strasbourg, France, June 14, 2007, B. V. Rathish Kumar.

14. Delivered the talk On Parallel Computations in Conjugate Problem in Thermo-Hydraulic Analysis of window based ADSS, Universit´e de Marne-La-Vall´ee, Paris, December 6, 2007, B. V. Rathish Kumar.

15. Delivered three lectures on Geometric applications of Sturm Comparison theorem and its modern generalizations, Department of Pure Mathematics, Calcutta University, March 16-22, 2008, G. Santhanam.

16. Delivered the talk The Fourier Algebra of a Locally Compact Group, Department of Mathematics, University of Jammu, Jammu, December 7, 2007, U. B. Tewari.

6. Conferences Attended Outside IIT Kanpur

1. 13th SIAM Conference on Parallel Processing for Scientific Computing PP08, Atlanta, Georgia, March 12-14, 2008. Presented the poster A Parallel Algorithm for Elliptic Eigenvalue Problems on Polygonal Domains Using Spectral Method, Lokendra Kumar Balyan.

2. Annual Conference of IMS, University of Pune, Pune, December 27-30, 2008. Chaired a session and organised a symposium on Biomathematics, Peeyush Chandra.

3. National Workshop on Mathematical Modelling in Biology, S. P. Women's University, Tirupati, February 25, 2008. Delivered the invited talk Mathematical Modeling in Epidemiology, Peeyush Chandra.

4. International Conference on Nonlinear and Variational Analysis, University of Limoges, France, June 20-22, 2007, J. Dutta.

5. Annual meeting of the Indian Academy of Sciences, November 2007, Thiruvananthapuram, India, A. K. Ghosh.

6. Great Plains Operator Theory Symposium, University of Nebraska, Lincoln, Nebraska, USA, May 15-20, 2007. Delivered talks Approximation Numbers of Matrix Transformations and Inclusion Maps and Representation Theorems for operators of type $l_{v,w,\,p,q}$, M. Gupta and L. R. Acharya.

7. Indian Math. Soc. Annual Meeting, University of Pune, Pune, December 27-30, 2007. Chaired a session, M. Gupta.

8. Symposium in Mathematics, Punjab University, Chandigarh, Feb 29-March 1, 2008. Delivered the talk On Certain Type of Modular Sequence Spaces, M. Gupta.

9. 5th International Conference of Dynamic Systems and Applications, Atlanta, Georgia, USA ; May30- June 2,2007. Delivered an invited lecture and chaired a session, M. K. Kadalbajoo.

10. CMMSE-07 conference, Chicago, Illinois, USA, June 19-23, 2007. Presented an invited talk in the special session on Numerical Solution of ODEs, M. K. Kadalbajoo.

11. 73rd Annual Conference of the IMS, Pune University, Pune, December 26-29, 2007. Delivered a talk, M. K. Kadalbajoo.

12. 5th International conference on Dynamic Systems and Applications, Atlanta, Georgia, USA, May30-June2, 2007. Chaired a technical session and delivered the invited talk Stability of Bivariate Fractal Interpolation Surfaces and Quantification of Tsunami Intensity, G. P. Kapoor.

13. IIT 2007-Global Conference, Santa Clara, California, USA, July 6-8, 2007, G. P. Kapoor.

14. Workshop On Topological Dynamics, Differential Equations and Applications, University of Hyderabad, March 14-15, 2008. Delivered two talks Fractal Interpolation: Theory and Applications, G. P. Kapoor.

15. Hyderabad Symposium of Probability and Statistics, University of Hyderabad, Hyderabad December 17-19, 2007. Invited speaker and presented the talk Texture Modeling, Debasis Kundu.

16. Platinum Jubilee Conference of the Indian Statistical Institute, I.S.I. Kolkata, January 01-04, 2008, Invited speaker and presented the talk Bayesian Optimal Sampling Plan, Debasis Kundu.

17. National Conference on Emerging Trends in Statistical Methods and Optimization Techniques, held at University of Jammu, Jammu, Feb 22 - 23, 2008 Invited speaker and presented the talk On Progressive Censoring, Debasis Kundu.

18. 73rd meeting of the IMS, Pune University, Pune. Delivered the invited talk Graph Structure via its Laplacian Matrix, A. K. Lal.

19. Trends of Harmonic Analysis, Strobl, Austria, June 18-22, 2007. Delivered the talk On Fuglede's Conjecture for three intervals, S. Madan.

20. 10th Discussion Meeting in Harmonic Analysis, IISc Bangalore, December 28, 2007- January 1, 2008 S. Madan.

21. Commutative Algebra and Algebraic Geometry 2007, ISI, Bangalore, July 16-20. Delivered the talk Multiplication Modules, A. K. Maloo.

22. Trends of Harmonic Analysis, Strobl, Austria, June 18-22, 2007, P. Mohanty.

23. 10th Discussion Meeting in Harmonic Analysis, IISc Bangalore, December 28, 2007- January 1, 2008, P. Mohanty

24. Workshop in Commutative Algebra and Algebraic Geometry, IIT Madras, June 10-23, 2007, Anand Parkash.

25. Banach Algebra 2007, Quebec City, Quebec, Canada, July 3-12, 2007. Chaired a session, S. R. Patel.

26. 73rd Annual Conference of the Indian Mathematical Society, Unversity of Pune, Pune, December 27-30, 2007. Delivered the talk Differential Operators on the Orlicz Spaces of Entire Functions, S. Pradhan.

27. Fifth International Conference on Dynamic Systems and Applications, Atlanta, USA, May 30 - June 2, 2008. Delivered the invited talk An Overview of the Oscillation of Implicit Differential Equations. Also chaired a session, V. Raghavendra.

28. 10th Discussion meeting in Harmonic Analysis, Department of Mathematics, Indian Institute of Sciences, Bangalore, December 28, 2007- January 1, 2008, S. K. Ray.

29. 10th Discussion meeting in Harmonic Analysis, Department of Mathematics, Indian Institute of Sciences, Bangalore, December 28, 2007- January 1, 2008, R. Rawat.

30. Workshop on Geometry and Topology, Department of Mathematics, Pune University, Pune, January 2-9, 2008. Gave the course of lectures Introduction to Riemannian Geometry, G. Santhanam.

31. International Conference on Modelling and Computation held at ISI Delhi from 9th to 10th January 2008. Presented the paper A Bender's Partitioning Based Heuristic for Solving the Optimal Communications Spanning Tree Problem, P. Sharma.

32. Geometric Modeling and Imaging, Zurich, July 2007. Presented the paper Some Non- Stationary subdivision Schemes, P. Shunmugaraj.

33. 62nd Annual Meeting of the STLE, Philadelphia, PA, USA, May 6-10, 2007. Presented the paper Thermal and roughness effects in a slider bearing with special reference to load generation in parallel sliders, P. Sinha.

34. The 2007 International Conference on Bioinformatics and Computational Biology (BIOCOMP' 07), LAS VEGAS, NV, USA, June 24-28, 2007. Presented the paper Chemical defense mechanism of two competing species via toxicant emission, P.Sinha.

35. A conference on Harmonic Analysis and Operator Theory, IISC, Bangalore, December 28, 2007-January 1, 2008. Chaired a session, U. B. Tewari.

7. Other Activities

(a) Technology Developed Nil

(b) Software Developed Nil

(c) Industry visited/visit to other Institutes for research

1. Invited Professor, Institut de Recherche en Informatique de Toulouse (IRIT), Universite Paul Sabatier, France, May 1-31, 2007, M. Banerjee.

2. Department of Mathematics, University of New South Wales, Sydney, Australia, 1st May 1-30, 2007, J. Dutta.

3. Department of Mathematics, University of South Australia, Adelaide, May 17-21, 2007, J. Dutta.

4. Department of Mathematics, University of Limoges, France, June 7- July 5, 2007, J. Dutta.

5. Department of Economic Theory, Universidad Autonoma de Barcelona, Spain, July 23-26, 2007, J. Dutta.

6. IIM Lucknow, July 13, 2007, P. Sharma.

(d) Patents

(e) Awards and Honors

1. Member, Steering Committee, Association for Logic in India, M. Banerjee.
2. Won the Kishore Vaigyanik Protsahan Yojna Fellowship, 2007, Ankur Jain (Y7072).
3. Elected as an associate of the Indian Academy of Sciences, 2007, A. K. Ghosh.
4. Senior Associate Editor, Applied Mathematics and Computation, M. K. Kadalbajoo.
5. Editorial Board Member of
    (1) Journal of Modern Applied Statistical Methods,
    (2) Journal Statistics and Its Applications,
    (3) Journal Communications in Statistics -Theory and Methods and
    (4) Journal Communications in Statistics-Simulation and Computation, D. Kundu.

(f) Continuing Education Activities

1. Co-ordinator, 2nd Indian Winter School on Logic, January 14-26, 2008, IIT Kanpur, M. Banerjee.
2. Organized DST NationalMeet of Research Scholars in Mathematical Sciences NMRSMS - 2007, October 30 - November 4, 2007, A. K. Lal.
3. Organised Fourth Annual Foundation School (NBHM), December 3-27, 2007, S.Madan, S. K. Ray and P. Mohanty.

(g) Participation in High Level Industry Academia Interaction Program during Summer.

(h) Any other important activity not specified in above columns.

1. Conference Programme Committee Membership: (1) International Conference on Rough Sets and Current Trends in Computing (RSCTC 2008), October 23-25, 2008, Akron, Ohio, USA. (2) International Conference on Rough Sets and Knowledge Technology (RSKT 2008), May 17-19, 2008, Chengdu, China. (3) Joint Rough Sets Symposium (JRS07), May 14-16, 2007, Toronto, Canada, M. Banerjee.
2. Visiting Faculty, NISER, Bhubaneswar, Jan-May 2008, S. Madan.
3. Visiting Professor at Department of Pure Mathematics, Calcutta University, March16-22, 2008, G. Santhanam.
4. One of the ten invited members to participate in the workshop on Development of Teacher's Handbook in Mathematics at Secondary Level, held at the Regional Institute of Education Bhopal, June 18-22, 2007, L. R. Acharya.