

Evaluative Report of the Department/Centre

1. Name of the Department/Centre: **DST-Centre for Interdisciplinary Mathematical Sciences (DST-CIMS).**
2. Year of establishment : **2007**
3. Is the Department is part of a School/Faculty of the university? : **Yes.**
4. Names of Programmes / Courses offered (UG, PG, M. Phil., Ph.D., Integrated Masters; Integrated Ph.D., etc.)
 - **Running Course**
 - Ph.D. in Mathematical Sciences
 - **Courses Offered**
 - i. M.Sc. in Statistics and Computing. (to be started from session 2013-14)
 - ii. Integrated Post Graduate Diploma in Actuarial Sciences. (to be started from session 2013-14)
 - iii. M.Sc. in Actuarial Sciences. (to be started from session 2014-15).
 - iv. M.Sc. in Computational Sciences and Applications in Signal Processing. (to be started from session 2014-15).
5. Interdisciplinary courses and departments involved:
 - Department of Mathematics, Faculty of Science, BHU.
 - Department of Statistics, Faculty of Science, BHU.
 - Department of Computer Science, Faculty of Science, BHU.
 - Department of Applied Mathematics, IIT-BHU.
6. Courses in collaboration with other universities, industries, foreign institutions, etc. : **No**
7. Details of programmes / courses discontinued, if any, with reasons: **No**
8. Examination System: Annual/ Semester/ Trimester/Choice Based Credit System :
Semester
9. Participation of the department in the courses offered by other departments :
10. Number of teaching posts sanctioned and filled (Professors/Associate Professors/Asst. Professors)

Post Designation	Sanctioned	Filled	Actual (including CAS & MPS)
Associate Professors	03	01	01
Assistant Professors	04	04	04

11. Faculty profile with name, qualification, designation and area of specialization, experience and research under guidance

Name	Qualification	Designation	Specialization	Experience (in Years)	No. of Ph.D. guided in last 4 years
Dr. B. Tiwari	Ph. D.	Associate Prof.	Differential Geometry	12 Years	NIL
Dr. R. Chaubey	Ph. D.	Assistant Prof.	Relativity & Cosmology	06 Years	NIL
Dr. M. K. Singh	Ph. D.	Assistant Prof.	Signal & Image Processing	05 Years	NIL
Dr. P. S. Pundir	Ph. D.	Assistant Prof.	Bayesian Statistics & Stochastic Modelling	03 Years	NIL
Dr. Sapna Devi	Ph. D.	Assistant Prof.	Mathematical Modeling	03 Years	NIL

Total -05

12. List of senior Visiting Fellows, faculty, adjunct faculty, emeritus professors

Emeritus Professors (UGC)

Prof. T. Singh, Ex Head, Dept. of Applied Mathematics, IIT-BHU, Varanasi.

Adjunct faculty

- i. Prof. Deepak Dey, Dept. of Statistics, Univ. of Connecticut, USA.
 - ii. Prof. Ravi S. Kulkarni, IIT, Bombay.
 - iii. Prof. Uma Shankar Tiwary, Indian Institute Information Technology, Devghat Jhalwa, Allahabad-221011
- The faculty members of all the four Departments viz. Mathematics, Statistics, Applied Mathematics and Computer Science will be the "adjunct members" of DST-CIMS.

Associate Members

- Prof. R. P. Malik, Dept. of Physics, BHU.
- Prof. T. Singh, Ex-Professor and Head, Dept. of Applied Mathematics, IIT-BHU.
- Prof. V. Menon, Ex-Prof. and Head, Dept. of Applied Mathematics, IIT-BHU.
- Prof. M. M. Tripathi, Dept. of Mathematics, BHU.
- Prof. S.R. Singh, Dept. of Mathematics, BHU.
- Prof. A. K. Singh, Dept. of Mathematics, BHU.
- Prof. Shyam Lal, Dept. of Mathematics, BHU.
- Dr. A. K. Misra, Dept. of Mathematics, BHU.
- Dr. B. S. Bhadauria, Dept. of Mathematics, B.HU
- Dr. S. K. Mishra, Dept. of Mathematics, BHU.
- Dr. D. R. Sahu, Dept. of Mathematics, BHU.
- Dr. Arvind Kumar Singh, Dept. of Mathematics, BHU.
- Dr. S.K. Upadhyay, Dept. of Applied Maths, IIT-BHU.
- Prof. Sandeep Kumar, Dept. of Mech. Engg., IIT-BHU.
- Prof. K. K. Singh, Dept. of Statistics, BHU.
- Prof. S. K. Singh, Dept. of Statistics, BHU.
- Prof. Manju Pandey, Ex-Professor Dept. of Zoology, BHU.
- Dr. G. P. Singh, Dept. of Community Medicine, IMS, BHU.
- Dr. B. P. Singh, Faculty of Commerce, BHU.
- Dr. O.P. Singh, U. P. College, Varanasi.
- Prof. Jayanta K. Ghosh, ISI, Kolkata, and Purdue University, USA.
- Prof. Dipak K. Dey, University of Connecticut, USA.
- Prof. R.S. Singh, University of Guelph, Canada.
- Dr. Richa Vatsa, Central University of Bihar, Patna.
- Dr. Rajkishore Prasad, University Department of Electronics, BRA Bihar University, Muzzaffarpur, Bihar.
- Dr. Tanveer J. Siddiqui, J. K. Institute of Applied Physics and Technology, University of Allahabad, Allahabad.

- Dr. Anil Kumar Singh, Department of Physics, Ewing Christian College, Allahabad.
- Dr. Manoj Kumar Mukul, Department of Electronics & Communication Engineering, Birla Institute of Technology (BIT), Mesra, Ranchi, India.
- Dr. Achintya Singhal, Department of Computer Science, RGSC, BHU.

13. Percentage of classes taken by temporary faculty – programme-wise information

14. Programme-wise Student Teacher Ratio

Ph.D. Mathematical Sciences: 3.6 : 1

15. Number of academic support staff (technical) and administrative staff: sanctioned and filled

Cadre	Sanctioned	Vacant
Ministerial(Contract)	01	01
Technical	00	00

16. Research thrust areas recognized by funding agencies

Thrust area recognized by department of science and technology (DST), government of India:

- Wavelets and Functional Analysis.
- Mathematical Modeling and Computational Aspects.
- Discrete Mathematics and Applications.
- Bayesian Statistics and Stochastic Modeling.

17. Number of faculty with ongoing projects from a) national b) international funding agencies and c) Total grants received. Give the names of the funding agencies and grants received project-wise.

S. No.	Project Title	Amount Received	Funding Agency	Investigators
1	Wavelet Analysis and its Applications	15,59,200/-	Department of Science & Technology, Government of INDIA.	Prof. R.S. Pathak

2	System Modelling and Signal Processing for Cardiopulmonary Sensing Using Microwave Sensor	46,59,000/-	Department of Science & Technology, Government of INDIA.	Dr. M. K. Singh Prof. Umesh Singh
3	Modelling of Bouncing Cosmology	16,98,240/-	Department of Science & Technology, Government of INDIA.	Prof. T. Singh & Dr. R. Chaubey

18. Inter-institutional collaborative projects and grants received

a) All India collaboration: NIL

b) International collaboration: One

Title : System Modelling and Signal Processing for Cardiopulmonary Sensing Using Microwave Sensor.

Funding Agencies: DST Government of India and Ministry of Education, Science and Technology, South Korea.

Amount : INR 46,59,000/-

19. Departmental projects funded by DST-FIST; UGC-SAP/CAS, DPE; DBT, ICSSR, etc.; total grants received.

NIL

20. Research facility / centre with

- state recognition
- **national recognition** ✓
- international recognition

21. Special research laboratories sponsored by / created by industry or corporate bodies

22. Publications:

- Number of papers published in peer reviewed journals (national / international):

Year	2007	2008	2009	2010	2011	2012	2013	Total
Paper Published	0	6	28	49	81	66	47+25*	302**

* Communicated for publication

** DST-CIMS Staff = 43; Associate Members / Adjunct Professor = 259.

- Monographs

- i. Manoj Kumar Singh, Umesh Singh, "Lecture Notes on Statistical Estimation and Modeling: Topics on Least Square Methods, Ill-Conditioned Inverse Problems in Imaging, Natural Language Processing & Information Retrieval, and Speech Processing", DST-Centre for Interdisciplinary Mathematical Sciences (DST-CIMS), Banaras Hindu University (BHU), 2011.
- ii. A.M. Mathai, Umesh Singh, Manoj Kumar Singh, "Lecture Notes on Multivariate Analysis-I", DST- Centre for Interdisciplinary Mathematical Sciences (DST-CIMS), Banaras Hindu University (BHU), 2011.
- iii. Sushil Kumar Yadav, Shipra Yadav, Anup Kumar, "Is the breastfeeding only factor affecting PPA", Lambert Academic Publishing, ISBN:978- 384541882, 2011
- iv. A.M. Mathai, Umesh Singh, Manoj Kumar Singh, "Lecture notes on Probability and Random Variable", DST- Centre for Interdisciplinary Mathematical Sciences (DST-CIMS), Banaras Hindu University (BHU), 2013.
- v. A.M. Mathai, Umesh Singh, Manoj Kumar Singh, "Lecture notes on "An Introduction to Fractional Calculus", DST- Centre for Interdisciplinary Mathematical Sciences (DST-CIMS), Banaras Hindu University (BHU), 2013.

- Chapters in Books

- i. Tapan K. Roy, Brijesh P. Singh & K. K. Singh, "Factors Affecting Child Mortality in Madhya Pradesh", Mortality Health and Development, MLC Foundation & Shyam Institute, Bhopal, pp. 63-74. ISBN: 978-93-82411-01-7, 2012.

- Edited Books
 - i. Dr. Shashi Kant Mishra, "Topics in Non Convex Optimization: Theory and Applications", Springer- Verlag, ISBN: 978-1-4419-9639-8, ISSN:1931-6828, 2011.
 - ii. Dr. Shashi Kant Mishra, "A Special Issue for Workshop/Conference on Optimization and Its Applications", Yugoslav Journal of Operations Research. ISSN: 2334-6043, 2012.
 - iii. P. S. Pundir, Umesh Singh & S. K. Upadhyay, "Emerging Applications of Bayesian Statistics and Stochastic Modelling", DST-CIMS, ISBN: 9789382359609, 2012.
 - Citation Index - range : 0 - 7 (Paper published during last five years and CIMS staff only excluding adjunct and associate members).
 - Impact factor range: 0 - 3.47 (0 Stands for journal listed in JCR but no impact factor, this data is for paper published during last five years and CIMS staff only excluding adjunct and associate members).
23. Details of patents and income generated
24. Areas of consultancy and income generated
25. Faculty selected nationally/ internationally to visit other laboratories in India and abroad
- i. **Two month visit (21 May -24 July 2012)** to Microwave Sensor and System Lab, Department of Mechatronics, Gwangju Institute of Science and Technology (GIST), under Indo-Korea Joint project on System Modeling and Signal Processing for Cardiopulmonary Sensing Using Microwave Sensor. This project is supported by department of science and technology (DST), government of INDIA, and ministry of education, science and technology republic of Korea.
 - ii. **Two month visit (May 2011 - June 2011)** to Microwave Sensor and System Lab at Gwangju Institute of Science and Technology South Korea for collaborative work in the area of application of microwave for health monitoring.
26. Faculty serving in

a) National committees b) International committees c) Editorial Boards d) any other (please specify)

i. Dr. R. Chaubey is in Editorial Board of the Journal of Modern Physics.

27. Faculty recharging strategies: For updating the faculty we have following activities at our centre

- i. Faculty members are participated and successfully completed the UGC refresher and orientation program.
- ii. Department organizes the workshop and training programs. Till date department organized 51 workshop / training / faculty development program on various topics. Details of these programs are given in section 30.
- iii. Department inviting distinguished international and national academician / researcher to deliver the lecture. Till date total 77 lectures are organized at the centre. Details of these programs are given in section 44.
- iv. Organizing group discussions regularly on various topics.

28. Student projects

- percentage of students who have done in-house projects including inter-departmental projects
- percentage of students doing projects in collaboration with other universities / industry / institute

29. Awards / recognitions received at the national and international level by

- Faculty

Dr. Manoj Kumar Singh has been awarded best paper award for the paper 'Feasibility of Heart Beat and Respiration Measurement using Motion Detector Based on Doppler Radar' in the National Seminar on Impact of Physics on Biological Science, ISBN 978-81-905712-9-6.

- Doctoral / post doctoral fellows

Anup Kumar (SRF DST-CIMS) has got Dr. C. Chandrasekharan Young Scientist award for his paper entitled "Sex Ratio at Birth: A Model Based Approach" in 33rd Annual Conference of Indian Association for the Study of

Population (IASP) held at Sanjay Gandhi Post Graduate Institute of Medical Sciences, (SGPGIMS), Lucknow during 11-13 Nov' 2011.

- Students
- Associated Faculty
 - i. **Prof. S. K. Upadhyay** has been elected as a Fellow (FSS) of The Royal Statistical Society.
 - ii. **Prof. R. C. Yadava** was felicitated by Indian Association for the Study of Population (IASP) for Excellence and immense contribution in the field of Population, Health and Development at the occasion of XXXIII Annual Conference of the IASP held at Sanjay Gandhi Post Graduate Institute of Medical Sciences, (SGPGIMS), Lucknow during Nov 11-13, 2011.
 - iii. **Prof. A. K. Srivastava** has been elected as Academic Secretary of Indian Mathematical Society of Indian Mathematical Society in January 2013.

30. Seminars/ Conferences/Workshops organized and the source of funding (national / international) with details of outstanding participants, if any.

2007-2008

- i. **Title:** Instructional Workshop on Wavelet Analysis
Date: Oct. 22-Nov. 05, 2007.
Convener: Dr. Harish Chandra, Department of Mathematics, BHU.
- ii. **Title:** Advanced Training Program (ATP) on Bayesian Statistics and Computation
Date: Feb. 18-Mar. 01, 2008.
Convener: Prof. S.K. Upadhyay, Department of Statistics

2008-2009

- i. **Title:** Workshop cum Training Programme on Stochastic Models and Their Applications
Date: Sep. 22-Oct. 04, 2008.
Convener: Prof. R.C. Yadava, Department of Statistics.
- ii. **Title:** Advanced Level Training Programme in Linear Algebra & Analysis
Date: Oct. 06-Oct. 10, 2008

Convener: Prof. A.K. Srivastava, Department of Mathematics

- iii. **Title:** Workshop on Discrete Mathematics and Applications
Date: (Feb. 25-26, 2008)
Convener: Dr. P.K. Mishra, Department of Computer Science
- iv. **Title:** National Conference and Workshop on High Performance Computing and Applications, Department of Computer Science, Banaras Hindu University, Varanasi.
Date: Feb. 09-11, 2009.
Convener: Dr. P. K. Mishra, Department of Computer Science, BHU.
- v. **Title:** All India Computer Science Student Technical Meet, TORQUE-2009, Department of Computer Science, Banaras Hindu University, Varanasi.
Date: Feb. 09-11, 2009.
Convener: Dr. P. K. Mishra, Department of Computer Science, BHU
- vi. **Title:** 1st LaTeX Training Programme
Date: 10-17 February, 2009.
Convener: Dr. B. P. Singh, Banaras Hindu University
Trainer: Sri Venugopal, Banaras Hindu University
- vii. **Title:** Advanced Training Programme on Non Convex Optimization and its Applications
Date: 23-25 March, 2009.
Convener: Dr. S. K. Mishra, Department of Mathematics, BHU.
Speakers:
 - Prof. Suresh Chandra, IIT, Delhi.
 - Prof. Phan Q. Khan, Inter. University, Ho Chi Minh City, Vietnam.
 - Prof. Q. H. Ansari, Aligarh Muslim University.
 - Prof. S. Nanda, IIT, Kharagpur.
 - Dr. J. Dutta, IIT, Kanpur.
 - Dr. C. Nahak, IIT, Karagpur.
 - Dr. C. S. Lalitha, University of Delhi.
 - Dr. Pankaj Gupta, University of Delhi.
 - Dr. S. K. Gupta, IIT, Patna.

2009-2010

- i. **Title:** 2nd LaTeX Training Programme
Date: 01-09 April, 2009.
Convener : Dr. G. P. Singh, IMS, Banaras Hindu University
Trainer: Sri. Venugopal, Banaras Hindu University

- ii. **Title:** National Workshop cum Training Programme on Advanced Numerical Techniques and its Applications (NWCTP-ANTA)
Date: 29 June, 2009 - 11 July, 2009).
Convener: Dr. B. S. Bhadauria, Department of Mathematics, BHU.
Speakers:
 Prof. M.K. Jain, IIT Delhi
 Prof. R.S. Gupta, IIT Roorkee
 Prof. M.K. Kadalbajoo, Department of Mathematics & Statistics, IIT Kanpur
 Prof. R.C. Mittal, Department of Mathematics, IIT Roorkee
 Prof. Y.N. Reddy, Department of Mathematics & Humanities, NIT Warangal
 Prof. Natesan Srinivasan, Department of Mathematics, IIT Guwahati
 Prof. Sanyasi Raju, Department of Mathematics, IIT Madras
 Prof. V.P. Saxena, Former V-C, Jiwaji University Gwalior
 Prof. V. K. Katiyar, Department of Mathematics, IIT Roorkee
 Prof. R.K. Mohanty, Department of Mathematics, Delhi University
 Prof. K.N.S. Kasi Viswanadham, Department of Mathematics & Humanities,
 Dr. Manoj Kumar, Department of Mathematics, MNNIT, Allahabad.
 Dr. Neeta Singh, Dept. of Mathematics, Allahabad University, Allahabad
 Prof. K. R.Pardasani (KRP), Dept. of Maths, MANIT, Bhopal.
- iii. **Title:** National Workshop cum Training Programme on Dynamical Systems: Analysis & Applications (NWCTP-DSAA)
Date: 22-31 October, 2009.
Convener: Dr. A. K. Misra, Department of Mathematics, BHU.
- iv. **Title:** IIIrd LaTeX Training Programme
Date: 30 November, 2009 – 05 December 2009.
Convener: Dr. G. P. Singh, IMS, Banaras Hindu University
Trainer: Sri Venugopal, Banaras Hindu University
- v. **Title:** Advanced Training Program on Bayesian Statistics: Theory and Applications (ATP-BSTA)
Date: Dec. 21- 27, 2009.
Convener: Prof. S. K. Upadhyay, Department of Statistics, BHU.
Speakers:
 Prof. Michael Evans, University of Toronto, Canada
 Prof. Bani Mallick, Texas A & M University, U.S.A.
 Prof. A. K. Bansal, University of Delhi
 Prof. R. K. Singh, Lucknow University
 Prof. A. A. Khan, Aligarh Muslim University.
 Prof. S. K. Upadhyay, Banaras Hindu University.

Dr. G. P. Singh, IMS, Banaras Hindu University.

Dr. O. P. Singh, U.P. College, Varanasi.

- vi. **Title:** Research Promotion Workshop on Introduction to Graph and Geometric Algorithms, Jointly with Prof. Subir Ghosh, School of Technology and Computer Science, Tata Institute of Fundamental Research Bombay.
Date: Jan. 27-29, 2010.
Convener: Dr. P. K. Mishra, Department of Computer Science, BHU.
- vii. **Title:** National Conference and Workshop on High Performance Computing and Applications, Department of Computer Science, Banaras Hindu University, Varanasi,
Date: Feb. 08-10, 2010.
Convener: Dr. P. K. Mishra, Department of Computer Science, BHU.
- viii. **Title:** Research Promotion Workshop on Introduction to Graph and Geometric Algorithms (IGGA-2010), Department of Computer Science, Banaras Hindu University, Varanasi.
Date: Feb. 08-13, 2010.
Convener: Dr. P. K. Mishra, Department of Computer Science, BHU.
- ix. **Title:** Research Promotion Workshop on Introduction to Graph, Algorithms and Applications (IGAA-2010), Department of Computer Science, Banaras Hindu University, Varanasi.
Date: Feb. 08-21, 2010.
Convener: Dr. P. K. Mishra, Department of Computer Science, BHU.
- x. **Title:** All India Computer Science Student Technical Meet, TORQUE-2010, Department of Computer Science, Banaras Hindu University, Varanasi.
Date: Feb. 10-11, 2010.
Convener: Dr. P. K. Mishra, Department of Computer Science, BHU.

2010-2011

- i. **Title:** Advanced Training Program in Functional Analysis - 2009 (ATPFA-2009)
Date: June 21, 2010 to July 03, 2010.
Convener: Dr. Harish Chandra, Department of Mathematics, BHU
Speakers:
Prof. Nand Lal, Lucknow.
Prof. R. K. Singh, University of Lucknow.
Prof. M. C. Joshi, IIT Bombay.

Prof. Anil Karn, University of Delhi.
Prof. Sanjay Kumar, University of Delhi.
Prof. A. K. Srivastava, Banaras Hindu University.
Prof. Shyam Lal, Banaras Hindu University.
Prof. R. S. Pathak, Banaras Hindu University.

ii. Title: National Workshop cum Training Programme on Recent Trends in Fluid Mechanics (NWCTP-RTFM)

Date: July 6 - 12, 2010.

Convener: Dr. B. S. Bhadauria, Department of Mathematics, BHU.

Speakers:

Prof. N. Rudraiah, Dept of Mathematics, Bangalore University, Bangalore.
Prof. P. G. Siddheswar, Dept. of Maths, Bangalore University, Bangalore.
Prof. P. Kandaswamy, Dept of Mathematics, Bharatiyar University, Coimbatore.
Prof. B. V. Rathish Kumar, Department of Mathematics and Statistics, IIT, Kanpur.
Dr. P. Bera, Department of Mathematics, IIT Roorkee.
Prof. G. C. Dash, SOA University, Khandagiri Square, Bhubaneswar-751030, Orissa.
Prof. M. Banerji, Department of Mathematics, Himachal Pradesh Univ., Shimla.

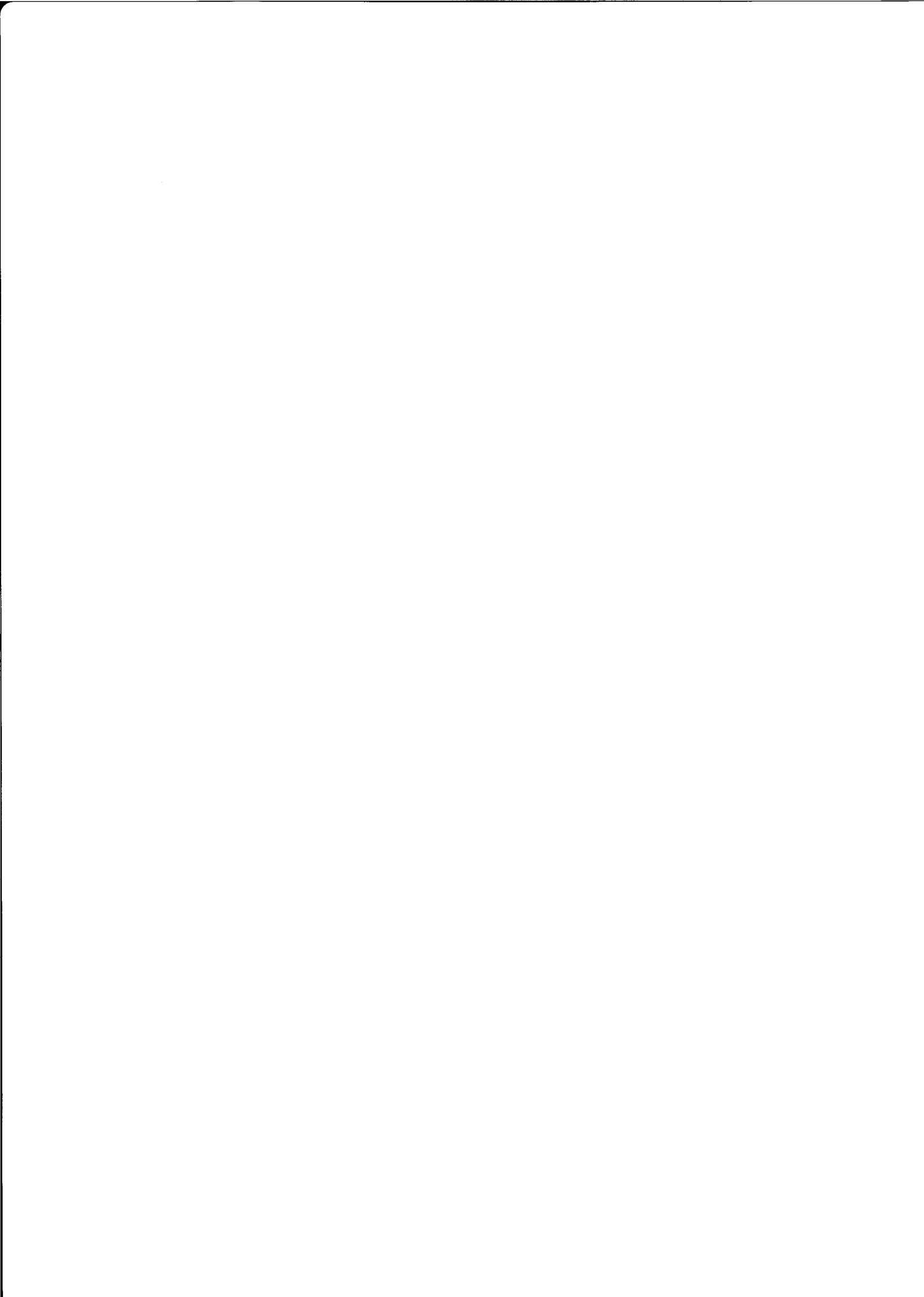
iii. Title: Advanced Training Programme in Linear Algebra & Analysis - 2009 (ATPLAA-2009)

Date: 25 November, 2010 - 04 December 2010.

Convener: Prof. A. K. Srivastava, Department of Mathematics, BHU.

Speakers:

Prof. R. K. Singh, Emeritus Fellow, Lucknow University.
Prof. V. V. Menon, (Formerly of) Inst. of Tech., B.H.U.
Prof. R. S. Pathak, DST-CIMS.
Prof. B. Rai, Univ. of Allahabad.
Prof. D. P. Chaudhary, Univ. of Allahabad.
Prof. S. K. Basu, Dept. of Comp. Sc., BHU.
Prof. R. K. Mandal, Dept. of Metallurgical Engg., B.H.U.
Prof. Shyam Lal, Dept. of Math., B.H.U.
Prof. Rekha Srivastava, Dept. of Appl. Math., B.H.U.
Dr. S. Bhattacharya, Dept. of Math., B.H.U.
Dr. Ashok J. Gupta, Dept. of Appl. Math., B.H.U.
Dr. A. K. Mishra, Dept. of Math., BHU.
Dr. D. R. Sahu, Dept. of Math., B.H.U.
Dr. Bankteshwar Tiwari, DST-CIMS.
Prof. A. K. Srivastava, Dept. of Math., B.H.U.



- iv. **Title:** Winter School on Statistical Estimation and Modeling: Topics on Least Square Methods & Ill-Conditioned Inverse Problems in Imaging, Natural Language Processing & Information Retrieval, and Speech Processing

Date: February 2 -15, 2011.

Convener: Dr. M. K. Singh, DST-CIMS, BHU.

Speakers:

Prof. Y. H. Kim, Gwangju Institute of Science and Technology, South Korea.

Prof. U. S. Tiwari, Indian Institute of Information Technology Allahabad.

Dr. Tanveer J. Siddiqui, University of Allahabad, Allahabad.

Dr. Raj Kishore, Principal, B.N. College, Patna.

Prof. Umesh Singh, Banaras Hindu University Varanasi.

Prof. S. K. Upadhyay, Banaras Hindu University Varanasi.

Dr. G. P. Singh, IMS, Banaras Hindu University Varanasi.

Dr. M. K. Singh, DST-CIMS, Banaras Hindu University Varanasi.

2011-2012

- i. **Title:** Workshop on Differential Geometry (WDG).

Date: May 2 - 11, 2011.

Convener: Dr. Banktेशwar Tiwari, DST-CIMS, BHU.

Speakers:

Prof. Ravi S. Kulkarni, IIT Bombay.

Prof. U P Singh, DDU Gorakhpur University Gorakhpur.

Dr. Anand Mangasuli, IISER Bhopal.

Dr. Krishna Kaipa, IIT Bombay.

Dr. Sanjay Kumar, DDU College, Delhi University.

Prof. A. K. Srivastava, BHU.

Dr. Harish Chandra, BHU.

Dr. B. Tiwari, DST-CIMS, BHU.

- ii. **Title:** National Instructional Workshop on Graph Theory and its Applications (WGTA)

Date: May 23-28, 2011.

Convener: Dr. P. K. Mishra, Dept. of Computer Science, BHU and Dr. T. Singh, BITS Pilani, Goa

Speakers:

Dr. B D Acharya, Delhi Technological University, Delhi.

Dr. Mukti Acharya, Delhi Technological University, Delhi.

Dr. B S Panda, IIT Delhi.

Dr. H B Walikar, Vice chancellor, Karnatak University Dharwad, Karnataka.

Dr. V Swaminathan, Director, SN College Madurai, Tamilnadu.

Dr. H S Ramane, GIT Belgaun, Karnataka.

Dr. R B Bapat, ISI New Delhi.
Dr. E Sampathkumar, University of Mysore.
Dr. S. M. Hegde, NIT, Suratkal.
Dr. G. Rabindra, NCERT Delhi.
Dr. Deepa Sinha, Banasthali University Banasthali, Rajasthan.
Dr. S. N. Rao, Mumbai.
Dr. Pratima Panigrahi, IIT Kharagpur.
Dr. T. Singh, BITS Pilani, Goa.

- iii. **Title:** 2nd SPSS Training Programme
Date: May 23-29, 2011.
Convener: Prof. K. K. Singh, Dept. of Statistics, BHU.
Speakers:
Dr. G. P. Singh, IMS, BHU.
Dr. Brijesh P. Singh, Faculty of Commerce, BHU.
- iv. **Title:** 3rd SPSS Training Programme.
Date: June 20-26, 2011.
Convener: Prof. K. K. Singh, Dept. of Statistics, BHU.
Speakers:
Dr. G. P. Singh, IMS, BHU.
Dr. Brijesh P. Singh, Faculty of Commerce, BHU.
- v. **Title:** SPSS Training Programme.
Date: Sep. 22-24, 2011.
Organizers: UGC Academic Staff College & DST-CIMS, BHU.
Speakers:
Dr. G. P. Singh, IMS, BHU.
Dr. Brijesh P. Singh, Faculty of Commerce, BHU.
- vi. **Title:** SPSS Training Programme in Mathematical Sciences.
Date: Nov. 08-12, 2011.
Organizers: UGC Academic Staff College & DST-CIMS, BHU.
Speaker:
Dr. G. P. Singh, IMS, BHU.
- vii. **Title:** SPSS Training Programme in Management Studies.
Date: Nov. 14-19, 2011.
Organizers: UGC Academic Staff College & DST-CIMS, BHU.
Speaker:
Dr. Brijesh P. Singh, Faculty of Commerce, BHU.

- viii. **Title:** Advanced Training Programme on Optimization and Its Applications (ATPOA)
Date: Nov. 23-29, 2011.
Convener: Dr. S. K. Mishra, Department of Mathematics, BHU.
Speakers:
 Prof. F. Giannesi, University of Pisa, Italy.
 Prof. H. Ben-El-Mechaiekh, Brock University, Ontario, Canada.
 Prof. T. Parthasarathy, ISI, Chennai.
 Prof. S. K. Neogy, ISI, Delhi.
 Prof. K. C. Siva Kumar, IIT, Chennai.
 Dr. A. K. Das, ISI, Calcutta.
 Dr. J. Dutta, IIT, Kanpur.
 Dr. Daya Gaur, IIT, Ropar.
 Dr. Prabhat Bhardwaj, IIT-BHU.
 Dr. Anil Agarwal. IIT-BHU.
- ix. **Title:** Workshop on Multivariate Analysis: Matrix Methods (WMAMM).
Date: 28th November 2011 to 3rd December 2011.
Convener: Dr. M. K. Singh, DST-CIMS, BHU.
Speaker:
 Prof. A. M. Mathai, Director, CMS, Pala.
- x. **Title:** National Conference on "Bayesian Statistics and its Emerging Applications (BSEA)."
Date: Dec. 09-10, 2011.
Convener: Dr. P. S. Pundir, DST-CIMS, BHU.
Speakers:
 Prof. A K Bansal, President, Indian Bayesian Society.
 Prof. A A Khan, Department of Statistics and O.R., A.M.U., Aligarh.
 Prof. R K Singh, Department of Statistics, Lucknow University, Lucknow.
 Prof. S K Upadhyay, Department of Statistics and DST-CIMS, BHU.
 Prof. Manju Pandey, Former Professor, Department of Zoology, BHU
 Prof. V. V. Menon, Ex.-Prof. , Department of Applied Mathematics, IIT-BHU.
 Dr. Sanjeev Kumar Tomer, Department of Statistics and DST-CIMS, BHU.
 Dr. G. P. Singh, Department of Community Medicine and DST-CIMS, BHU.
 Dr. O. P. Singh, Department of Statistics, U. P. College, Varanasi.
- xi. **Title:** SPSS Training Programme.
Date: Jan. 10-13, 2012.
Organizers: UGC Academic Staff College & DST-CIMS, BHU.
Speaker:
 Dr. G. P. Singh, IMS, BHU.

- xii. **Title:** 1st LaTeX Training Programme.
Date: Feb. 13-18, 2012.
Convener: Dr. P. S. Pundir, DST-CIMS, BHU.
Speaker:
 Mr. D. Venu Gopal, BHU.
- xiii. **Title:** 2nd LaTeX Training Programme.
Date: Feb. 27-March 03, 2012.
Convener: Dr. P. S. Pundir, DST-CIMS, BHU.
Speaker:
 Mr. D. Venu Gopal, BHU.
- xiv. **Title:** National Seminar on New Dimensions in Statistics Concept and Issues
Date: March 2-4, 2012.
Convener: Prof. V. K. Singh, Dept. of Statistics & DST-CIMS, BHU.
Speaker:
 Prof. A. K. Bansal, Prof. R. K. Singh, Prof. Arvind Pandey, Prof. Ashis Sengupta, Prof. B. B. Singh, Prof. B. V. S. Sisodia, Dr. G. N. Singh, Dr. S. Prasad, Dr. D. Majhi, Dr. Kalpana K. Mahajan, Dr. Radhey S. Singh, Dr. R. L. Shinde, Dr. R. K. Singh, Dr. S. K. Singh, Dr. S. P. Singh, Dr. Manoj Kumar Srivastava, Dr. Namita Srivastava, Dr. G. N. Singh, Dr. Virendra Singh.
- xv. **Title:** 3rd LaTeX Training Programme.
Date: March 19-24, 2012.
Convener: Dr. P. S. Pundir, DST-CIMS, BHU.
Speaker:
 Mr. D. Venu Gopal, BHU.

2012-2013

- i. **Title:** Faculty Development Programme on Research Methods and use of SPSS in Data Analysis.
Date: June 02-15, 2012.
Convener: Dr. G. P. Singh, Dept. of Community Medicine, IMS, BHU.
Speaker:
 Dr. G. P. Singh, Dept. of Community Medicine, IMS, BHU.
- ii. **Title:** National Workshop cum Training Programme on Computing Techniques and Applications (NWCTP-CTA)

Date: July 01-07, 2012.

Convener: Dr. Arvind Kumar Singh, Dept. of Mathematics, BHU.

Speakers:

Prof. R. K. Mohanty, Dept. of Mathematics, Delhi University, Delhi.

Prof. B. S. Bhadauria, B. B. Ambedkar University, Lucknow.

Prof. K. N. S. Kashi Viswanadhan, NIT, Warangal.

Prof. Y. N. Reddy, NIT, Warangal.

Prof. R. C. Mittal, IIT, Roorkee.

Prof. S. R. K. Iyengar, Ex-Prof., Dept. of Mathematics, IIT, Delhi.

Prof. S. Raju, IIT, Madras.

Prof. S. R. Singh, Dept. of Mathematics, BHU.

Prof. A. K. Singh, Dept. of Mathematics, BHU.

Dr. S. Natesan, IIT, Guwahati.

Dr. Arvind Kumar Singh, Dept. of Mathematics, BHU.

Dr. A. K. Misra, Dept. of Mathematics, BHU.

iii. Title: Training Programme on Integral Transforms, Wavelets, Distribution Theory and Applications (ITWDTA)

Date: July 12-21, 2012.

Convener: Dr. S. K. Upadhyay, Dept. of Applied Mathematics, IT-BHU

Speakers:

Prof. K. N. Shukla, Retd. Scientist, ISRO.

Prof. K. K. Azad, University of Allahabad, Allahabad.

Prof. Santosh Joshi, Walchand College of Engineering, Sangli.

Prof. B. N. Mandal, ISI, Kolkata.

Prof. Sandeep Kumar, Dept. of Mechanical Engg., IIT-BHU.

Prof. Shyam Lal, Dept. of Mathematics, BHU.

Prof. K. N. Rai, Dept. of Applied Mathematics, IIT-BHU.

Prof. R. S. Pathak, Ex-Professor, Dept. of Mathematics, BHU.

Dr. S. K. Upadhyay, Dept. of Applied Mathematics, IIT-BHU.

Dr. A. K. Shukla, SVNIT, Surat.

Dr. Shubi Khan, AMU, Aligarh.

Dr. Hemant Kumar, D.A.V. College, Kanpur.

Dr. Akhilesh Prasad, Indian School of Mines, Dhanbad.

iv. Title: One Day Programme in Geometry (for UG students)

Date: (21.10.2012)

Convener: Prof A. K. Srivastava, Dept. of Mathematics, BHU

Speakers:

Prof. U. P. Singh, Gorakhpur University.

Prof. M. M. Tripathi, BHU.

Dr. B. Tiwari, DST-CIMS.

- v. **Title:** National Meet of Research Scholars in Mathematical Sciences (NMRSMS) sponsored by DST Government of India.

Date: Nov. 18-22, 2012.

Coordinator: Dr. A. K. Misra, Dept. of Mathematics, BHU.

Speaker:

Prof. Karmeshu, JNU, New Delhi.

Prof. B. D. Sharma, Indraprastha Univ, New Delhi.

Prof. Satyadev, HRI Allahabad.

Prof. Kadalbaju, IIT Kanpur.

Prof. S. A. Katre, Univ of Pune.

Prof. V. V. Menon (Retd. Professor), IIT-BHU.

Prof. A. K. Srivastava, Dept. of Mathematics, BHU.

Prof. S.R.Singh, Dept. Mathematics, BHU.

Prof. Umesh Singh, Dept. of Statistics, BHU.

Dr. Arvind Kumar Singh, Dept. of Mathematics, BHU.

Dr. A. K. Singh, Dept. of Mathematics, BHU.

Dr. Harishchandra, Dept. of Mathematics, BHU.

Dr. A. K. Misra, Dept. of Mathematics, BHU.

Dr. P. S. Pundir, DST-CIMS, BHU.

Dr. Sapna, DST-CIMS, BHU.

- vi. **Title:** International Conference on New Trends in Field Theories (NTFT).

Date: Nov. 23-26, 2012.

Convener: Prof. R. P. Malik, Dept. of Physics, BHU.

Speakers:

Prof. Ashok Sen, FRS, HRI, Allahabad.

Prof. G. Rajasekaran, IMSc & CMI, Chennai.

Prof. F. Toppan, Rio de Janeiro.

Prof. Sandip Trivedi, Mumbai.

Prof. L. Bonora, SISSA, Trieste, Italy.

Prof. A. Khare, IISER, Pune.

Prof. A. Lahiri, SBNCBS, Kolkata.

Prof. M. Sivakumar, Univ. of Hyderabad.

Prof. Rajesh Gopakumar, HRI, Allahabad.

Dr. E. Harikumar, Univ. of Hyderabad.

Prof. P. Panigrahi, IISER, Kolkata.

Prof. B. P. Mandal, BHU.

Prof. Y. Singh, BHU.

Total Participants were 63 out of which 13 from abroad and rest from different parts of India.

- vii. **Title:** Regional Mathematical Olympiad
Date: Dec. 02, 2012.
Coordinator: Prof. Umesh Singh, DST-CIMS.
- viii. **Title:** Madhava Mathematics Competition 2013
Date: Jan. 06, 2013.
Coordinator: Dr. Banktेशwar Tiwari, DST-CIMS.
- ix. **Title:** ISBA Regional Meeting and International Workshop / Conference on Bayesian Theory and Applications (IWCBTA)
Date: Jan. 06-10, 2013.
Convener: Prof. S. K. Upadhyay, Dept. of Statistics, BHU
Speakers:
Prof. Sheikh Parvaiz Ahmad, Srinagar.
Prof. Aquil Ahmad, Srinagar.
Prof. Alexandridis Konstantinos, University of Virgin Islands, USA.
Prof. Antoniano- Villalobos, Isadora, Delhi.
Prof. Arivariganan, G, Madurai.
Prof. Ashok K Bansal, Delhi.
Prof. James O Berger, Duke University, USA.
Prof. José M Bernado, Universitat de Vanencia, Spain.
Prof. Márcia D'Elia Branco, Univesidade de Sao Paulo, Brasil.
Prof. Kishore K. Das, Guwahati.
Prof. Sourish Das, Mumbai.
Prof. Sadanand Dwivedi, Delhi.
Prof. John Geweke
Prof. Jayanta K Ghosh, Kolkata.
Prof. Joyee Jhosh, Kolkata.
Dr. Pramod Gupta, Delhi.
Dr. Rahul Gupta, Jammu.
Prof. Chris Holmes, Delhi.
Prof. Insua David Ríos, Delhi.
Prof. Johansen Adam M, Delhi.
Prof. J. Jothikumar, Chennai.
Prof. Ram Prakash Khatiwada, Kathmandu.
Prof. Robert Kohn, Delhi.
Prof. A. Loganathan, Tirunelveli.
Prof. Khurshid Ahmad Mir, Srinagar.
Prof. Balgobin Nandram, Delhi.
Prof. Dilip C Nath, Guwahati.
Prof. Rajiv Pandey, Lucknow.

Prof. Azizur Rahman, Kolkata.
Dr. Omkar Rai, Delhi.
Prof. Radhey Shyam Singh, Delhi.
Prof. R K Singh, Lucknow.
Prof. Singpurwalla Nozer D, USA.
Prof. Simon Wilson.

- x. **Title:** 78th Annual Conference of the Indian Mathematical Society.

Date: Jan. 21-25, 2013.

Organizing Secretary: Prof. A. K. Srivastava, Dept. of Mathematics, BHU

Speakers:

Prof. Gopal Prasad, University of Michigan, USA.
Prof. Huzoor Khan, AMU, Aligarh.
Prof. J. K. Verma, IIT Bombay.
Prof. V. Srinivas, TIFR, Bombay.
Prof. Basudeb Datta, IISc, Bangalore.
Prof. S. D. Adhikari, HRI, Allahabad.
Prof. Ajay Kumar, DU.
Prof. P. K. Jain, DU.
Prof. R. S. Kulkarni, IIT Bombay.
Prof. A. R. Shastri, IIT Bombay.
Prof. S. B. Nimse, Prof. J. R. Patadia, , Prof. H. K. Mukharjee.
Prof. Q. H. Ansari, Prof. Sunita Gakkhar, Dr. A. K. Misra, Prof. K. Ramesh.
Dr. K. Gangopadhyaya, Prof. P. K. Ratnakumar, Prof. Punita Batra.
Dr. S. K. Upadhyaya, Prof. M. K. Khan, Prof. R. S. Pathak, Prof. B. N. Mandal.

- xi. **Title:** Workshop on Basic Probability & Statistics (WBPS)

Date: Jan. 28-Feb. 02, 2013

Convener: Dr. M. K. Singh, DST-CIMS,

Resource Person:

Prof. A. M. Mathai, CMS, Pala.

- xii. **Title:** Advanced Training Program on Nonlinear Functional Analysis and its Applications (ATO-NFA).

Date: March 04-10, 2013.

Convener: Dr. D. R. Sahu, Dept. of Mathematics, BHU.

Speakers:

Prof. D. V. Pai, IIT Gandhi Nagar.
Prof. P. N. Srikanth, TIFR-CAM Bangalore.
Prof. K. Sandeep, TIFR-CAM, Bangalore.
Prof. P. Veeramani, IIT Chennai.
Prof. G. Lopez, Spain.

Prof. Q. H. Ansari, AMU Aligarh.
 Prof. B. C. Dhage, Nanded.
 Prof. Mamta Rani, Noida.
 Prof. D. Bahuguna, IIT Kanpur.
 Prof. A. K. Srivastava, BHU.
 Prof. R. S. Pathak, DST-CIMS, BHU.
 Dr. S. K. Upadhyay, IIT-BHU.
 Prof. Shyam Lal, BHU.

2013-2014

1. **Title:** SP Singh Memorial Workshop on Discovering Statistics by using MS Excel and SPSS Programme.

Date: May 27 June 04, 2013.

Convener: Dr. G. P. Singh, IMS, BHU

Speakers:

Dr. G. P. Singh, IMS, BHU.

Prof. Umesh Singh, DST-CIMS.

Prof. S. K. Upadhyay, BHU.

Prof. Abhay Indrayan, Delhi Uninesity.

Prof. Ashish Bajpai, FMS, BHU.

31. Code of ethics for research followed by the departments

32. Student profile course-wise:

Name of the Programme (refer to question no. 4)	Applications received	Selected		Pass percentage	
		Male	Female	Male	Female
Ph.D. (Mathematical Sciences)	73	18	0	N/A	
M.Sc. (Statistics and Computing)	to be started from session 2013-14				
Integrated Post Graduate Diploma in Actuarial Sciences	to be started from session 2013-14				

Publications:

a) Paper published in refereed journals till date

S. No.	Details of Paper	National/ International	Citation Index	ISSN	SNIP	SJR	Impact Factor
1	R. S. Pathak and Ashish Pathak: Asymptotic expansions of the wavelet transform for large and small values of b , International J. Math. and Math. Sc. Vol. 2009 Art. Id. 270492.	International	0				-
2	R. S. Pathak and S.R. Verma, Eigenfunction wavelet transform, Integral Transforms and Special Functions, 2009, 20(12), 883-896.	International	0	1476-8291			0.730
3	R.S. Pathak and S.R. Verma: Wavelet Transform, Integral Transforms and Special Functions, 2010, 20(12), 883-896.	International	0	1476-8291			0.730
4	R. S. Pathak: Convolution for the discrete wavelet transform, International Journal of Wavelets, Multi resolution Analysis and Information Processing, 9(6), (2011), 905-922.	International	1	1793-690X			0.500
5	R. S. Pathak: Dual integral equations involving wavelet transforms, Investigations in Math. Sci. 1 (2011), 41-46	National	0	2250-1436			-
6	R. S. Pathak: n-Dimensional Sobolev type spaces involving Hankel transformation (with Akhlesh Prasad and Manish Kumar, ISM, Dhanbad), Applied Math and Computation, 218 (2011), 899-905.	International	0	0096-3003			1.349
7	R.S. Pathak: Variation- diminishing wavelets and wavelet transforms, Real Analysis Exchange, 37(1), 2011, 147-166.	International	0	1930-1219			-
8	R.S. Pathak: Dual integral equations involving wavelet transforms, Investigations in Mathematical Sciences, 1, 2011, 41-46.	National	0	2250-1436			-
9	R. S. Pathak, S.K. Upadhyay and R. S. Pandey, The Bessel Wavelet Convolution Product, Rend. Sem. Mat. Politec. Torino, 69(3), 267-279, 2011.	International	0	0373-1243			-
10	Sapna Devi (with Manju Agarwal): A Stage-Structured Predator-Prey Model with Density-Dependent Maturation Delay, Int. J. Biomath., 4 (2011), 289-312.	International	1	1793-7159			1.667
11	Manoj Kumar Singh, Tanveer J Siddiqui, Yong Hoon Kim & Umesh Singh (2011), Feasibility of Heart Beat and Respiration Measurement using Motion Detector Based on Doppler Radar,	National	0	ISBN 978-81-905712-9-			-

	National Seminar on Impact of Physics on Biological Science,			6			
12	R. Chaubey. Bianchi type-V ₀ Universe with wet dark fluid, (2011). Nat. Sci. Vol.3, No.10, 817-826 doi: 10.4236/ns.2011.310107	International	0	2150-4091			-
13	R. Chaubey. Bianchi Type-III and Kantowski-Sachs Universes with wet Dark Fluid, (2011). Int. J. Astron. Astrophys. 25-28. doi:10.4236/ijaa.2011.12005	International	0	2161-4717			-
14	R. Chaubey. Interacting generalized chaplygin gas model in Bianchi type - I universe. Nat. Sci. Vol.3, No.7, 513-516 (2011) doi: 10.4236/ns.2011.37072	International	0	2150-4091			-
15	R. S. Pathak: Dual equations involving convolution transforms of generalized functions (with J. N. Pandey, Carleton University, Ottawa, Canada), Integral Transforms and Special Functions, 23 (8), 2012, 595-608.	International	0	1476-8291			0.730
16	R.S. Pathak: Fractional Fourier transform of tempered distributions and generalized pseudo-differential operator (with Akhlesh Prasad and Manish Kumar, ISM, Dhanbad), J. Pseudo-Differ. Oper. Appl., 3(2), 2012, 239-254.	International	0	1662-999X			-
17	R.S.Pathak: n-Dimensional pseudo-differential operator involving Hankel transform (with Akhlesh Prasad and Manish Kumar, ISM, Dhanbad), Proc. Indian Acad. Sci. Math. Sci., 122(1), 2012, 99-120	National	0	0973-7685			0.191
18	R.S.Pathak : The Cauchy wavelet transform on tube domains, Investigations in Mathematical Sciences, 2(1), 2012, 127-139.	National	0	2250-1436			-
19	D.K. Patel, T. Som, M.K. Singh, Handwritten Character Recognition Using Multiresolution Technique and Euclidean Distance Metric, Journal of Signal and Information Processing, vol. 3, pp. 208-214, 2012.	International	0	2159-4481			-
20	D. K. Patel, T. Som, M.K. Singh, Improving the Recognition of Handwritten Characters using Neural Network through Multi-resolution Technique and Euclidean Distance Metric, International Journal of Computer Applications, vol. 45, no. 6, pp.38-50, 2012	International	0	0975-8887			0.814
21	Sapna Devi (with Manju Agarwal, Abhinav Tandon): Mathematical Model to Study the Effects of Primary and Secondary Pollutants on Biological Population, Nonlinear Studies, 19 (2012), 93-106.	International	0	3153-4373			-

22	Sapna Devi: Nonconstant Prey Harvesting in Ratio-Dependent Predator Prey System Incorporating a Constant Prey Refuge, Int. J. Biomath., 5(2012), 1250021	International	3	1793-7159			1.667
23	Sapna Devi (with Manju Agarwal): A Resource-Dependent Competition Model: Effects of Population Pressure Augmented Industrialization, Int. J. Model. Simul. Sci. Comp., 3(2012), 125003	International	0	1793-9615			-
24	Bankeshwar Tiwari, On Landsberg Spaces with some Generalised T-Conditions, Journal of Indian Math. Soc. Vol. 79(1-4), 169-176, 2012	National	0	0019-5839			-
25	Bankeshwar Tiwari, On Special reducible Finsler spaces, Diff. Geom. Dyn. Sys., Vol. 14, 246-251, 2012.	International	0	1454-511X			-
26	Bankeshwar Tiwari, On Normalized Semi Parallel T'-vector field in Finsler space, Int. Journal of Pure and Applied Mathematics, Vol.101(6),667-676, 2012.	International	0	1311-8080			-
27	R. Chaubey. Kantowski-Sachs Cosmological Model in Lyra's Geometry, (2012). Int. J. Theor. Phys. Vol. 51, 3933-3940. DOI:10.1007/s10773-012-1285-5.	International	1	0020-7748			0.845
28	R. Chaubey, Bianchi type-V Bulk Viscous Cosmological Models With Particle Creation In Brans-Dicke Theory, (2012). Astrophys. Space Sci. Vol. 342, 499-509. DOI:10.1007/s10509-012-1168-5.	International	1	0004-640X			1.686
29	R. Chaubey (with T. Singh). Phantom Appearance of Non-phantom Matter in Anisotropic Cosmological Model, (2012). Int. J. Theor. Phys. Vol. 51, 3495-3507. DOI:10.1007/s10773-012-1235-2.	International	0	0020-7748			0.845
30	R. Chaubey (with T. Singh). Tachyon Potential in Bianchi type- V Universe, Gravitation & Cosmology, (2012). Vol.18, No.1, 39-42. DOI:10.1134/S02022289312010173.	International	1	0202-2893			0.457
31	R. Chaubey (with T. Singh), Dark Energy with Generalized Equation of state in Bianchi Type-I Cosmological Model, Int. J. Theor. Phys., (2012). Vol. 51, 90-100 / DOI : 10.1007/s10773-011-0881-0.	International	3	0020-7748			0.845
32	R. Chaubey (with T. Singh). An Interacting Two-Fluid Scenario for Dark Energy in Bianchi type-I Cosmological Model, (2012). Research in Astronomy and Astrophysics (IOP Publishing). Vol. 12, No.5, 473-484.	International	3	1674-4527			1.320

33	R.S.Pathak, Cauchy wavelet transform in tube domains, Invest. Math. Sci. 2(1), 2012, 127-147.	National	0	2250-1436			-
34	R.S.Pathak, Properties of the wavelet transform , Invest. Math. Sci. 2(2), 2012, 273-300.	National	0	2250-1436			-
35	Pranav Waila, Vivek Kumar Singh, Manoj Kumar Singh, Evaluating Blog Data on Women Issues Using Bayesian Sentiment Analysis, ISBA Regional Meeting and International Workshop/Conference on Bayesian Theory and Applications (IWC/BTA). January 6-10, 2013, Banaras Hindu University (BHU), Varanasi-221 005.	National	0				-
36	Won-Gyum Kim, Nam-Won Moon, Manoj Kumar Singh, Hwang-Kyeom Kim and Yong-Hoon Kim, 'Characteristic analysis of aspheric quasi-optical lens antenna in millimeter-wave radiometer imaging system,' Applied Optics, Vol. 52, No. 6, pp. 1122-1131, 2013.	International	0	2155-3165			1.689
37	R. Chaubey (with A.K. Shukla), A New Class of Bianchi Cosmological Models in Lyra Geometry, (2013). Int. J. Theor. Phys. Vol. 52, 735-749.	International	1	0020-7748			0.845
38	R. Chaubey (with T. Singh). An Interacting Two-Fluid Scenario for Dark Energy in Anisotropic Cosmological Model, (2013). Canadian Journal of Physics, Vol. 91, 180-187.	International	0	1208-6045			0.857
39	R. Chaubey (with T. Singh). Phantom Appearance of Non-phantom Matter in Bianchi type-I Cosmological Model, (2013). Int. J. Theor. Phys. Vol. 52, 69-83. DOI:10.1007/s10773-012-1300-x.	International	0	0020-7748			0.845
40	R. Chaubey (with A.K. Shukla). A New Class of Bianchi Cosmological Models in $f(R,T)$ Gravity, (2013). Astrophys. Space Sci. Vol. 343, 415-422. DOI:10.1007/s10509-012-1204-5.	International	7	0004-640X			1.686
41	R. Chaubey. Bianchi type-V Cosmological model with two Interacting scalar Fields, (2013). Int. J. Theor. Phys. Vol. 52, 1300-1308.	International	0	0020-7748			0.845
42	Sapna Devi (with Manju Agarwal): Modeling Effects of Increasing Population and Industrialization Augmented Pollution on the Health of Human Population, (2013). Int. J. Applied Math. Mech., Vol. 9 No. 2, 95-114.	International	0	0973-0184			-

43	Sapna Devi: Effects of prey refuge on a ratio-dependent predator-prey model with stage-structure of prey population. Applied Mathematical Modelling. (2013), Vol. 37, 4337-4349.	International	0	0307-904X			1.706
44	Bankeshwar Tiwari, On the hypersurface of a Special semi-C-reducible Finsler space, Journal of Indian Mathematical Society (Accepted)(2012).	National	0	0019-5839			-

b) Paper published in Books/Edited Books: NIL

S. No.	Details of Paper	ISBN	Publisher (National/ International)

33. Diversity of students

Name of the Course (refer to question no. 4)	% of students from the same university	% of students from other universities within the State	% of students from universities outside the State	% of students from other countries
Ph.D.(Mathematical Sciences)	5.56	83.33	11.11	NIL
M.Sc. (Statistics and Computing)	to be started from session 2013-14			
Integrated Post Graduate Diploma in Actuarial Sciences	to be started from session 2013-14			

34. How many students have cleared Civil Services and Defence Services examinations, NET, SET, GATE and other competitive examinations? Give details category-wise.

S. No	Name	Designation	Date of Joining	Date of Leaving	Remarks
1	Sheo Kumar Singh	JRF	20.05.2009	31.09.2010	To join CSIR JRF
2	Suman Rai	JRF	20.05.2009	08.06.2010	To join other Institute
3	Sandeep Dixit	JRF	23.05.2009	30.07.2011	Ph.D. Awarded/Lecturer
4	Akmal Husain	JRF	23.05.2009	15.07.2010	Ph.D. Awarded /Lecturer
5	Sag Ram Verma	JRF	26.05.2009	26.03.2011	Ph.D. Awarded /Lecturer
6	Shilpi Tanti	SRF	01.06.2009		NET Qualified
7	Vineet Srivastava	JRF	01.06.2009	10.08.2009	Ph.D. Awarded /Lecturer
8	Akshara Pande	JRF	01.06.2009	07.12.2010	To join CSIR JRF
9	Puneet Kishor Srivastava	JRF	01.06.2009	30.04.2012	To join at DU
10	Neha Singh	JRF	01.07.2009	17.07.2010	Ph.D. Awarded /Biostatistician
11	Anup Kumar	SRF	01.07.2009	02.11.2012	To join RGSC, BHU (At present Asst. Prof. at Central Univ. of Rajasthan.)
12	Rajwant Singh Rao	JRF	11.03.2011	25.06.2011	To join R.G. Fellowship
13	Rajendra Prasad	JRF	11.03.2011	31.12.2011	To join CSIR JRF
14	Vishal Singh	JRF	14.03.2011		NET Qualified

15	Mukesh Kumar	JRF	18.03.2011	06.07.2011	Ph.D. Awarded /Lecturer
16	Sunil Kumar	JRF	01.08.2011		NET Qualified
17	Anil Kumar Nishad	JRF	01.08.2011	31.12.2011	
18	Anjani Kumar Shukla	JRF	05.08.2011		NET Qualified
19	Sarveshanand	JRF	12.03.2012		NET Qualified
20	Sarita Yadav	JRF	12.03.2012		NET Qualified
21	Manoj Kumar	JRF	12.03.2012		NET Qualified
22	Gunjan Singh	JRF	14.03.2012		NET Qualified
Project JRF's					
23	Manish Kumar	JRF in P-07/465	03.08.2011		NET Qualified
24	Akhilesh Kumar Singh	JRF in P-07/504	10.05.2012		NET Qualified

35. Student progression

Student progression	Percentage against enrolled
UG to PG	
PG to M.Phil.	
PG to Ph.D.	
Ph.D. to Post-Doctoral	
Employed	
<ul style="list-style-type: none"> • Campus selection • Other than campus recruitment 	
Entrepreneurs	

36. Diversity of staff

Percentage of faculty who are graduates	
of the same university	
from other universities within the State	
from universities from other States	
from universities outside the country	

37. Number of faculty who were awarded Ph.D., D.Sc. and D.Litt. during the assessment period

38. Present details of infrastructural facilities with regard to

a) Library: **Yes**

b) Internet facilities for staff and students: **Yes**

- c) Total number of class rooms: 02
- d) Class rooms with ICT facility
- e) Students' laboratories: 02
- f) Research laboratories: 02

39. List of doctoral, post-doctoral students and Research Associates

- a) from the host university

Doctoral

Prashant Kumar Mishra
Jitendra Kumar Dubey
Hemant Kumar Mishra

- b) from other universities

Doctoral

Tadkeshwar Nath Mishra
Dharm Raj Singh
Pranav Waila
Manoj Kumar
Sandeep Kumar Porwal
Anjani Kumar Shukla
Subrahamanyam Upadhyay
Surjan Singh
Anuj Kumar
Deepak Rout
Piyush Kumar Singh
Pramod Kumar
Ghanshyam Kumar Prajapati
Dinesh Kumar
Ashutosh Singh
Rahul Chandra Kushwaha

Sarnam Singh

Post-Doctoral

Dr. Abhishek Singh, Dr. D. S. Kothari Post Doctoral Fellow.

40. Number of post graduate students getting financial assistance from the university.
41. Was any need assessment exercise undertaken before the development of new programme(s)? If so, highlight the methodology.
42. Does the department obtain feedback from
 - a. faculty on curriculum as well as teaching-learning-evaluation? If yes, how does the department utilize the feedback?
 - b. students on staff, curriculum and teaching-learning-evaluation and how does the department utilize the feedback?
 - c. alumni and employers on the programmes offered and how does the department utilize the feedback?
43. List the distinguished alumni of the department (maximum 10)
44. Give details of student enrichment programmes (special lectures / workshops / seminar) involving external experts.

Lectures by Overseas Visitors

A. International Visitors

2007-2008

- i. Prof. S. P. Singh, Dept. of Mathematics, Univ. of Western Ontario, Canada.
Date: Jan. 23- Feb.15, 2008.
Topics: Fixed Point Theory and its applications, Iterative Process in Fixed Point Theory, Approximation Theory.
- ii. Prof. Dipak K. Dey, Dept. of Statistics, University of Connecticut, USA.
Date: Jan. 07-10, 2008.
Topic: Survival Analysis, Cluster Analysis

- iii. Prof. James Glazebrook, Dept. of Mathematics & Computer Science, Eastern Illinois University, USA.
Date: Feb. 02, 2008.
Topic: Prospective on Groupoids.

2008-2009

- i. Prof. J. N. Singh, Dept. of Mathematics & Computer Science, Barry University, USA,
Date: Jul. 11, 2008
Topic: Karmarkar's Algorithm and Its Consequences in Computational Complexity in Linear Programming Algorithm.
- ii. Prof. J. S. Manhas, Dept. of Mathematics, Sultan Qaboos University, Oman.
Date: Aug. 11-20, 2008.
Topic: Weighted Composition Operators on Banach Spaces of Analytic Functions.
- iii. Prof. R. S. Singh, Dept. of Mathematics & Statistics, University of Guelph, Canada,
Date: Aug. 20-21, 2008.
Topic: Non-parametric Empirical Bayes Approach to Statistical Inference.
- iv. Prof. Adam Koranjyi, Lehman College, City University of New York, USA,
Date: Jan. 20, 2009.
Topic: Homogeneous Operations in Hilbert Space.
- v. Prof. S. P. Singh, Univ. of Western Ontario, Canada
Date: Jan 17-Feb 22, 2009.
Topic: Delivered several lectures on 'Fixed point Theory' and interacted with faculty members and students.

2009-2010

- i. Prof. Tetsuzo Tanino, Department of Engineering, Osaka University, Japan
Date: 08 October, 2009 - 10 October, 2009.
Topic: Foundations of Vector Optimization.
- ii. Prof. S. P. Singh, Univ. of Western Ontario, Canada

Date: Jan 22-Feb 28, 2010.

Topic: Delivered a series of lectures on 'Fixed Point Theory' and 'Measure Theory' and interacted with faculty members and students.

2010-2011

- i. Prof. S. Deshmukh, Department of Mathematics, King Saud University, Saudi Arabia.
Date: August 03 - 04, 2010.
Topic: Eigen values of Laplacian operator on a Riemannian manifold, conformal vector fields and their applications, Geometry of Ricci soliton, Geometry of tangent bundle of a hyper surface.
- ii. Prof. Juan Enrique Martinez-Legaz of Autonomous University of Barcelona, Spain.
Date: August 25 - 26, 2010.
Topic: Convex Representations and Subjectivity Theorems On a Sufficient Condition for Equality of two Maximal Monotone Operators.
- iii. Prof. Amy Ong Tsui, Director, The Bill & Melinda Gates Institute of Population & Reproductive Health, John Hopking Bloomberg School of Public Health, Baltimore, USA.
Date: September 04, 2010.
Topic: Pre-conception care goes a long way: Estimating the impact of contraception on birth spacing and maternal and infant mortality.
- iv. Prof. Ruichi Ashino, Osaka Kyoiku University, Japan.
Date: November 30, 2010 & December 04, 2010.
Topic: Introduction to Wavelet Transform Sparse Representation and Linear Codes.
- v. Prof. Akira Morimoto, Osaka Kyoiku University, Japan.
Date: December 01, 2010.
Topic: Blind Image Separation using Wavelet Transform.
- vi. Prof. Takeshi Mandai, Osaka Electro-communication University, Japan.
Date: December 03, 2010.
Topic: On Translation Invariance of Averages of Projection Operators in Discrete Wavelet Transform.

- vii. Prof. Esko Turunen, Tampere University of Technology, Finland.
Date: December 07-21, 2010.
Topic: Paraconsistent Pavelka Style Fuzzy Sentential Logic Many-valued Similarity - Theory and Applications, GUHA-method: A logic approach to data mining.
- viii. Prof. Prem Goyal, Ohio State University, U.S.A.
Date: December 21, 2010.
Topic: Bayesian estimation of traffic flow by combining information in image and ground based traffic data.
- ix. Prof. Young Jin Suh, Kyungpook National University, South Korea.
Date: December 31, 2010.
Topic: Commuting Ricci tensor of real hypersurfaces in complex two-plane Grassmannians and related topics.
- x. Prof. D. Aussel, University of Perpignan, France.
Date: Feb. 4, 2011.
Topic: Normal approach of quasi convexity with applications to Generalized Nash Equilibrium Problem.
- xi. Prof. S. P. Singh, Department of Maths, University of Western Ontario, Canada,
Date: Feb. 25, 2011.
Topic: Best Approximation and Applications in Nonlinear Analysis.
- xii. Prof. Kiran Bhutani, Catholic University of America, Washington,
Date: March 01, 2011.
Topic: Virtual Path Layout for Expansion and Compression in Graphs.
- xiii. Prof. H. Joshi, Department of Mathematics and Statistics, York University, Toronto, Canada,
Date: March 03, 2011.
Topic: Maatric Chhand of Raam-Charit-Maanans and Fibonacci Sequence.
- xiv. Dr. Aaron Williams, Carleton University, Canada.
Date: March 03, 2011.
Topic: Cooler Gray Codes and de Bruijn Cycles, The Nine Lives of Josephus / Binary Graceful Labels.
- xv. Prof. Andrey Viktorovich Tetenov, Gorno-Altai State University, Russia.

Date: 04-12 Mar. 2011.

Topic: Delivered a series of 5 lectures on Self Similar Fractals and Their Basic Properties.

2011-2012

- i. Prof. Gabor Kassay, Faculty of Mathematics and Computer Science, Babes-Bolyai University, Cluj, Romania.
Date: Nov. 16, 2011.
Topic: Monotone operators and closed countable sets.
- ii. Prof. L. D. R. Kocinac, University of Nis, Serbia.
Date: Nov. 16-18, 2011.
- iii. Prof. Joydev Chattopadhyay of ISI, Kolkata.
Date: 29th November 2011 to 4th December 2011.
- iv. Prof. R. G. Vishwakarma, University of Zacatecas, Mexico.
Date: Dec 7, 2011.
Topic: Is the empty universe really empty.
- v. Prof. Koji Matsumoto, Dept. of Math Education, Yamagata University, Japan,
Date: Dec. 13-18, 2011.
Topic: Geometry of Locally Conformal Kaehler Manifolds, Submanifolds of Locally Conformal Kaehler Manifolds.
- vi. Prof. Oldrich Kowalski, Mathematical Institute, Charles University, Sokolovskí 83, Prague 18675, Czech Republic,
Date: Dec. 13-18, 2011.
Topic: Curvature – homogenous spaces of type $(1, 3)$, Geometric measure theory and sub manifolds.
- vii. Prof. Sujit Ghosh, University of North Carolina, USA.
Date: Dec. 28-30, 2011.
- viii. Prof. Y. H. Kim, Gwangju Institute of Science and Technology, South Korea
Date: Jan. 23, 2012.
Topic: Opportunity for Researchers and Faculty of BHU for Collaborative Research and Development at Gwangju Institute of Science and

Technology, South Korea, Application of Microwave in Health Monitoring.

- ix. Prof. H W Hethcote, Emeritus Professor, University of Iowa, USA.
Date: Jan. 31, 2012.
Topic: Mathematical Modeling of Infectious Diseases, Some Open Problems in Mathematical Modeling.

- x. Prof. Masud Chaichian, Dept. of Physical Sciences and Helsinki Institute of Physics, University of Helsinki, Finland.
Date: Feb. 08, 2012.
Topic: Albert Einstein: Physicist of All Times.

- xi. Prof. Anca Tureanu, University of Helsinki, Finland.
Date: Feb. 08, 2012.
Topic: CPT and Lorentz Invariance their Relation and Violation.

- xii. Prof. R. S. Singh, University of Guelph, Canada.
Date: Feb. 29, 2012.
Topic: Empirical Bayes.

- xiii. Prof. H M Srivastava, Emeritus Professor of Mathematics, University of Victoria, Canada.
Date: Mar. 12 & 13, 2012.
Topic: Fractional Calculus and Its Applications. Riemann, Hurwitz and Hurwitz-Lerch Zeta Functions.

- xiv. Prof. (Mrs.) Rekha Srivastava, Professor of Mathematics (Retd.), University of Victoria, Canada.
Date: Mar. 15, 2012.
Topic: Some Glimpses of Hindu (or Vedic) Mathematics and Srinivas Ramanujan.

2012-2013

- i. Dr. Chandra Putcha, Professor, Department of Civil Engineering, California State University, Fullerton, CA 92834
Date: June 29, 2012.

Topic: Basic Principles and Applications of Reliability and Risk Analysis and Applications.

ii. Prof. Carla Farsi, University of Colorado, USA.

Date: Sep.-Nov., 2012.

iii. Prof. J. N. Pandey, Professor Emeritus, School of Mathematics and Statistics, Carleton University, Ottawa Ontario K1S5B6, Canada

Date: Nov. 02 & 09, 2012

Topics:

a. The Continuous wavelet transform in n-dimension (window function approach) for classical functions.

b. The Continuous wavelet transform in n-dimension (window function approach) for distributions (generalized functions)

iv. Prof. L. Bonora, Sissa, Trieste, Italy.

Date: Nov. 29, 2012

Topics:

Aspects of Strings

v. Prof. Sy-Ming Guu, Taiwan

Date: Dec. 03, 2012

Topic:

On best approximate solutions for the inconsistent fuzzy relations

vi. Prof. Nicolas Hadjisavvas, University of Aegean, Greece.

Date: Dec. 04, 2012

Topic:

Solving the revealed preference problem in consumer theory

vii. Prof. Jaun Enrique Martinez-Legaz, Autonomous University of Barcelona, Spain.

Date: Dec. 11, 2012

Topic:

Characterization of Lipschitz Continuous DC Functions

- viii. Prof. Satish Tripathi, President, State University of New York, Buffalo, USA.

Date: Dec. 12, 2012

Topic:

Identification Technologies: A Necessity for the 21st Century

- ix. Prof. V. Murali, Rhodes University, Grahamstown, South Africa.

Date: Dec. 13, 2012

Topic:

Ordered Partitions and Finite Fuzzy Sets

- x. Prof. R. G. Vishwakarma, Zacatecas University, Mexico.

Date: Dec. 19, 2012

Topic:

Einstein's Real "Biggest Blunder"

- xi. Prof. Ganti Prasada Rao, President and CEO, Inventive Pathways-
Management Consultancy, Member UNESCO-EOLSS Joint Committee, Abu
Dhabi, UAE.

Date: Feb. 11, 2013

Topic:

Genesis, Genetics and Evolution of the World of Mathematics from the
Hindu Zero and Number Concepts.

2013-2014

- i. Prof Kuldeep kumar, Bond University, Australia

Date: April 29, 2013.

Topic: Hybrid Statistical Models and its applications from financial fraud
detection, bankruptcy prediction to breast cancer detection

- ii. Prof. Cidambi Srinivasan, Department of Statistics, University of
Kentucky, Lexington, KY 40506-0027, USA

Date: May 20, 2013

Topic: Local and Global Analytic Curve Estimation with Application to Nano-Science.

B. National Visitors

2007-2008

- i. Prof. S. N. Dwivedi, Dept. of Biostatistics, AIIMS, New Delhi.
Date: Feb. 14, 2008.
Topic: Randomized Clinical Trial
- ii. Prof. R. K. Singh, Dept. of Mathematics, University of Jammu, Jammu.
Date: Feb. 20, 2008.
Topic: Dynamical System and Operators.
- iii. Prof. R. K. Singh, Dept. of Mathematics, University of Jammu, Jammu.
Date: Feb. 26, 2008.
Topic: Functional Equation and Linear Dynamics-An Illustration of the Beauty and Power of Mathematics.
- iv. Prof. B. K. Dass, Dept. of Mathematics, University of Delhi, Delhi.
Date: Mar. 19, 2008.
Topic: Mathematics in 21st Century.
- v. Prof. A. M. Mathai, Director, Centre for Mathematical Sciences, South Pala & Hillarea Campuses, Palai, Kerala.
Date: Mar. 19, 2008.
Topic: Statistical Distributions with Application in the Study of Random Volumes, Astrophysics Problems, Information Theory and Other Areas. Statistics—Some general Issues.
- vi. Prof. T. Parathasarathy, Indian Statistical Institute, Banagalore.
Date: Mar. 19, 2008.
Topic: Stochastic Modelling.

- vii. Prof. A. Dharmadhikari, Dy. Gen. Manager, Quality Systems & Reliability Engineering, Tata Motors Ltd., Pimpri, Pune.
Date: Mar. 19, 2008.
Topic: Reliability – Issues in Automobile Industries.

2008-2009

- i. Prof. J.C. Misra, Centre for Theoretical Physics, IIT, Kharagpur.
Date: May 12-17, 2008.
Topic: Mathematical Biosciences: A Historical Review, Mathematical Modeling of the Cardiovascular System, Mathematical Modeling of Blood Flow in Normal and Atherosclerotic Arteries.
- ii. Prof. R.C. Yadava, Dept. of Statistics, BHU, Varanasi.
Date: Sep. 22- Oct. 04, 2008.
Topic: Stochastic Models and Their Applications.
- iii. Dr. Janardan Yadava, Ministry of Statistics & Program Implementation.
Date: Dec. 22, 2008
Topic: An Overview of National Accounts Statistics.

2009-2010

- i. Sri Pawan Kumar Sharma, Risk Analyst, RMSI, New Delhi.
Date: 07 August, 2009.
Topic: Statistical Fundamentals of RMS (Risk Management Solutions) Modeling
- ii. Prof. R. P. Malik, Department of Physics, Banaras Hindu University, Varanasi.
Date: 10 November, 2009.
Topic: Two-Form Gauge Theory: New Features.
- iii. Prof. S. K. Basu, Department of Computer Science, Banaras Hindu University, Varanasi.
Date: November 12, 16, 23, 27 and December 05, 2009.
Topic: Algorithm Designing - A Guided Tour (Lecture Series)

- iv. Prof. J.V. Narlikar, Emeritus Professor, Inter-University Centre for Astronomy and Astrophysics
Date: 20-24, February 2010.
Topic: KHAGOL VIGYAN KI MAHATTA (Public Lecture in Hindi), Cosmology from the Sidelines (3 Technical Lectures).
- v. Dr. Wagish Shukla, Department of Mathematics, IIT, New Delhi
Date: March 03-04, 2010.
Topic: Categorical Quantum Computing (2 Lectures).

2010-2011

- i. Dr. K.C. Chakraborty, Dy. Governor, Reserve Bank of India.
Date: Sept 14, 2010.
Topic: Statistics and Statisticians.
- ii. Mr. R. G. Mitra from UNICEF.
Date: November 29, 2010.
Topic: Census of India
- iii. Dr. Tarkeshwar Singh from BITS Pilani, K. K. Birla Goa Campus, Goa
Date: December 21, 2010.
Topic: Graph Theory and its Applications; Talk on Computational Graph Theory and Complexity by Prof. A. M. Mathai, Director, Pala Centre, Pala, Kochi, 2010.
- iv. Prof. S.L.Singh, Ex Dean, Faculty of Science & Head, Dept. of Mathematics, Gurukul Kangri Vishwavidyalaya, Haridwar, Uttarakhand.
Date: 21 Jan. 2011.
Topic: Vedic Binary Numbers.
- v. Prof. J. V. Narlikar, Emeritus Professor, IUCAA, Pune,
Date: March 04, 2011.

2011-2012

- i. Prof. Avinash V. Khare, Raja Ramanna Fellow (DAE), IISER, Pune.
Date: 07-10 April 2011.

Topic: INTEGRABLE MODELS.

- ii. Prof. V. Menon, Ex- Head, Dept. of Appl. Maths., I.T., BHU.
Date: 21 April 2011.
Topic: Mathematical Modelling (Part -1).
- iii. Prof. V. Menon, Ex- Head, Dept. of Appl. Maths., I.T., BHU.
Date: 29 April 2011.
Topic: Mathematical Modelling (Part-2).
- iv. Prof. S. B. Joshi, Department of Mathematics, Walchand College of Engineering, Sangli, **Date:** June 02-06, 2011.
Topics: Recent Trends in Harmonic Mappings, Geometric Function Theory and its Applications to Fractional Calculus Operators.
- v. Prof. G. P. Singh, Department of Mathematics, VNIT, Nagpur,
Date: June 17, 2011.
Topic: Current Trends in Relativistic Cosmology.
- vi. Late Prof. D. N. Verma, Tata Institute of Fundamental Research (TIFR), Mumbai,
Date: July 20-22, 2011.
Topic: Representation Theory and its Role in dealing with the Most Fundamental Problem of Computer Science (Part 1 & 2).
- vii. Prof. A. M. Mathai, Director, Centre for Mathematical Sciences, Pala,
Date: August 01-02, 2011.
Topic: Testing of Statistical Hypothesis.
- viii. Late Prof. D. N. Verma, Tata Institute of Fundamental Research (TIFR), Mumbai.
Date: Oct. 14, 2011.
Topic: Some new twist (+ surprise ancient connection) along my NP=P quest.
- ix. Prof. G. Rajshekharan, Emeritus Professor, CMI/IMSC, Chennai.
Date: Dec. 07-11, 2011.
Topic: Is there is a Final Theory? (a journey into the micro cosmos) (2 lectures);
Neutrinos and the India based neutrino observatory.
- x. Prof. C.S. Aravinda, TIFR Centre for Applicable Mathematics, Bangalore,

Date: Jan 02-07, 2012.

Topic: Delivered a series of four lectures Jacobi fields-A Working Geometer's Basic Tool.

- xi. Prof. Ashok W. Deshpande Chair: Berkeley Initiative on Soft Computing (BISC)-Special Interest Group-Environment Management Systems (EMS), Guest Faculty, University of California, Berkeley Adjunct Professor, University of Pune,

Date: Jan 09-10, 2012.

- xii. Prof. Pawan K. Jain, Ph.D., F.N.A.Sc., Formerly, Professor and Head, Department of Mathematics, University of Delhi.

Date: Feb. 27 & 29, 2012.

Topics: Basic Inequalities for Certain Banach Function Spaces; Weak* Sequential Compactness of the Dual Unit Ball of Banach Spaces with PRI

- xiii. Dr. K.C. Chakrabarty, Deputy Governor, Reserve Bank of India (RBI)

Date: Mar. 20, 2012.

Topic: Uses and Misuses of Statistics.

- xiv. Dr. Prashant K. Srivastava, IIT, Patna.

Date: Mar. 24, 2012.

Topic: How time lags affect dynamics of HIV and immune system.

- xv. Dr. M. P. Mishra, School of Computer and System Sciences, IGNOU, New Delhi.

2012-2013

- i. Dr. Anil Kumar Yadav, Dept. of Physics, Anand Engg. College, Agra

- ii. Dr. Manoj Kumar Mukul, Department of Electronics and Communication Engineering, Birla Institute of Technology (BIT), Mesra, Ranchi, India.

Date: Sep. 13, 2012

Topic: Mathematical Modelling and Analysis of Brain Signals for Brain Computer Interface.

- iii. Prof. U. S. Tiwari, IIIT, Allahabad.

Date: Sep. 13, 2012

Topic: Wavelet based Modelling of Images and Text.

- iv. Prof. A.K. Bansal, Department of Statistics, Faculty of Mathematical Sciences, University of Delhi, Delhi.

Date: Sep. 15, 2012

- v. Dr. Anand Murgan, Deputy Librarian, CL, BHU.

Date: Oct. 04, 2012

Topic: Effectiveness of e-resources available in BHU library.

- vi. Justice Yatindra Singh, Sitting and Senior Judge, Allahabad High Court, Allahabad.

Date: Oct. 05, 2012

Topic: Srinivasa Ramanujan - The Genius

- vii. Prof. A.K. Agarwal, Centre for Advance Mathematics, Panjab University, Chandigarh.

Date: Oct. 19-20, 2012

Topics:

a. The legacy of Srinivasa Ramanujan.

b. Ramanujan's congruence properties of the partitions function $p(n)$.

- viii. Dr. S. L. Singh, UGC Emeritus Fellow (2011-12) Gurukul Kangri University, Haridwar

Date: Nov. 29, 2012

Topic: Recent developments in the Theory multivalued contractions

- ix. Prof. J. V. Desh Pandey, IISER, Pune

Date: Feb. 02, 2013

Topic: New light on some aspects of Reliability Theory

- x. Prof. R. Gopa Kumar, HRI, Allahabad.

Date: Feb. 11, 2013

Topic: String Theory and the Quest for Quantum Spacetime

xi. Prof. J. Maharana, Institute of Physics/ NISER Bhubaneswar

Date: Feb. 19-20, 2013

Topic: Laws of Universe (Colloquium Talk)

2013-2014

i. Prof. Mihir Banerjee, Department of Mathematics, Shimla University, Shimla.

Date: April 22-26, 2013

Topics:

- a. Rigorous Mathematical proof of Prof. S. Chandrashekhar prediction.
- b. Banerjee-Shandil semi-circle Theorem.
- c. About the work of Prof. S. Chandrashekhar.

ii. Dr. Sandip Singh, School of Mathematics, TIFR, Mumbai.

Date: May 03, 2013.

Title: Arithmetic Monodromy Groups.

iii. Dr. Navin Chandra, Department of Statistics, Pondicherry University, Pondicherry.

Date: June 07, 2013

Topic: Augmented Strength Reliability Models.

45. List the teaching methods adopted by the faculty for different programmes. :
46. How does the department ensure that programme objectives are constantly met and learning outcomes are monitored?
47. Highlight the participation of students and faculty in extension activities.
48. Give details of "beyond syllabus scholarly activities" of the department.
49. State whether the programme/ department is accredited/ graded by other agencies? If yes, give details.
50. Briefly highlight the contributions of the department in generating new knowledge, basic or applied.

51. Detail five major Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department.

Five major strengths:

- i. Having rich resources for young researcher and scientist to perform interdisciplinary research in mathematical sciences (Mathematics, Computer Science, and Statistics).
- ii. Having excellent experts from our center and associated departments for educating the students in interdisciplinary areas of mathematical science by running the master and Ph.D. program.
- iii. Having various experts groups belonging to mathematical sciences to solve the real problems belonging to interdisciplinary areas of mathematics, computing, statistics and allied discipline.
- iv. Having committed and dedicated research scholar, JRF, and PDF.
- v. Having network of nationally and internationally known figure in respective field. They are associated as Adjunct Professor / Associate member of the centre.

Five major weaknesses:

- i. Limited number of PG courses.
- ii. No UG courses.
- iii. Trying to widen the covering area of mathematical sciences, but having limited number of hands.
- iv. For interdisciplinary exposure depends on faculty members of other departments.
- v. Shortage of support staff.

Five major opportunities:

- i. Developing research groups in high priority areas of mathematical sciences.
- ii. Promoting interdisciplinary research in mathematical sciences and allied subjects in BHU and around.
- iii. Sharing knowledge and expertise with other institution and researchers

- for solving the open research problems
- iv. Sharing with the other institution and researchers the high quality infrastructure and resources developed at the centre.
- v. Promotion of collaborative research work.

Five major challenges:

- i. To bring the experts working in their own fields and convince them for collaborative interdisciplinary research.
- ii. To meet out all diversified demands for organizing summer / winter school, workshop / conferences.
- iii. Arranging funds for meeting out the expenditure of foreign experts to hold them for longer duration for collaborative research work.
- iv. Accommodating Ph.D. students of other than mathematical sciences for research on the topic of interdisciplinary nature. It requires certain changes in the existing rule of Ph.D. registration.
- v. Developing curriculum of true interdisciplinary as per present requirement of society/ market.

52. Future plans of the department.

I. Expected Programmes:

- i. Advanced Workshop on “Partial Differential Equations: Analysis and Applications” (PDEAA-2013)

Convener: Dr. A.K. Misra, Dept. of Mathematics, BHU.

Duration: 22-07-2013 to 31-07-2013.

- ii. School on Wavelet Theory and Application Speech, Image and Biomedical Signal Processing.

Convener: Dr. M. K. Singh, DST-CIMS, BHU.

Speakers: Prof. R. S. Pathak, DST-CIMS, BHU, Varanasi, Dr. Manoj Kumar Singh, DST-CIMS, BHU, Varanasi.

Duration: 2-3 week.

- iii. MATLAB training program for UG, PG, Ph.D. and Faculties.

Convener: Dr. M. K. Singh, DST-CIMS, BHU.

Speaker: Dr. Manoj Kumar Singh, DST-CIMS, BHU, Varanasi, Trainer From MATHWORKS.

Duration: 2-3 week.

iv. National Conference and Workshop on High performance Computing and Applications, Dec. 2013.

Convener: Dr. P.K. Mishra, Dept. of Computer science, BHU.

v. Research Promotion Workshop on Graph, Algorithms and Applications, Dec. 2013.

Convener: Dr. P. K. Mishra, Dept. of Computer science, BHU.

vi. LaTeX Training Programme.

Convener: Dr. P. S. Pundir, DST-CIMS, BHU.

Speaker: Mr. D. Venu Gopal, BHU.

Duration: 1 week.

II. Expected Visitors:

- i. Prof. D. Dutta Majumder, ISI, Kolkata
- ii. Prof. J. Chatopadhyay, ISI, Kolkata.
- iii. Prof. Balram Dubey, BITS, Pilani.
- iv. Prof. Mini Ghosh, Dhiru Bhai Ambani Group of Institutions.
- v. Prof. J. B. Shukla, IIT, Kanpur.
- vi. Prof. Joydeep Dhar, IIITM, Gwalior.
- vii. Prof. V. S. H. Rao, Jawahar Lal Nehru Technological University, Hyderabad.
- viii. Prof. Sunita Gakkhar, IIT, Roorkee.
- ix. Prof. Karmeshu, JNU, New Delhi.
- x. Prof. Ranjeet Kumar Upadhyay, ISM, Dhanbad.
- xi. Prof. V. Raghvendra, Department of Mathematics, I.I.T. Kanpur, Kanpur.
- xii. Prof. V. D. Sharma, Department of Mathematics, I.I.T. Bombay, Mumbai.
- xiii. Prof. Peeyush Chandra, Department of Mathematics and Statistics, I.I.T. Kanpur.
- xiv. Prof. J. C. Mishra, Department of Mathematics and Statistics, I.I.T. Kanpur.
- xv. Prof. Amiya Kumar Pani, Department of Mathematics, I.I.T. Bombay, Mumbai.
- xvi. Prof. M. K. Kadalbajoo, Department of Mathematics and Statistics, I.I.T. Kanpur.
- xvii. Prof. S. Sundar, Department of Mathematics, I.I.T. Madras, Chennai.
- xviii. Prof. B. Rai, Department of Mathematics, University of Allahabad,

Allahabad.

- xix. Prof. L. P. Rai, Scientists in CSIR, New Delhi.
- xx. Prof. J. V. Narlikar. IUCAA, Pune.
- xxi. Prof. T. Padmanabhan, IUCAA, Pune.
- xxii. Prof. R. G. Vishwakarma, Maxico.
- xxiii. Prof. H. Amirhaschi, Iran.
- xxiv. Prof. K. N. Shukla, Ex-Scientist, Vikram Sarabhai Space Centre, Trivandrum.
- xxv. Prof. S. K. Joshi, Regional Engineering College, Sanghli.
- xxvi. Prof. Gadadhar Mishra, Indian Institute of Science, Bangalore.
- xxvii. Prof. R.S. Kulkarni, IIT Bombay.
- xxviii. Prof. Sudeb Mitra, City University of New York, USA.
- xxix. Prof. Z. Shen, Department of Mathematics, University of Purdue.
- xxx. Prof. C. S. Aravinda, TIFR Centre for Applicable Mathematics, Bangalore.
- xxxi. Prof. Harish Sheshadri, Indian Institute of Science, Bangalore.
- xxxii. Dr. Anand Mangasuli, IISER Bhopal.
- xxxiii. Dr. G. Santhanam, IIT Kanpur.
- xxxiv. Prof. Dipak K. Dey, University of Connecticut, USA
- xxxv. Prof. Prem Goel, Ohio State University, USA
- xxxvi. Prof. J. K. Ghosh, ISI, Calcutta and Purdue University, USA
- xxxvii. Prof. Tapas Samanta and Prof. Mohan Delampady, ISI
- xxxviii. Prof. R.S. Singh, University of Guelph, Canada
- xxxix. Prof. Michael Evans, University of Toronto, Canada
