ANNUAL REPORT-2004

Introduction:

The Department of Mathematics comprises of 27 regular faculty members and three visitors with expertise in various areas of Mathematics, Statistics and Theoretical Computer Science. The faculty members strive to maintain quality teaching and research standards. Year after year, the faculty is winning awards for excellence in teaching and research contribution.

There is an active involvement of the department in developing partnership with industry in terms of providing solution strategies for industrial problems. Pfizer Ltd. has sponsored four Scholarships for M.Sc. students to promote this partnership.

The Industrial Mathematics Group (IMG) at I.I.T Bombay aims to provide necessary inputs for Mathematical Technology in terms of
 * Research and Development Projects
 * Consultancy Projects
 * In-House and In-Campus Workshops
 * Curriculum Development Activities
 * Skill Development Activities
Essentialy, these objectives entail forging long term partnership betweeen the academia and industry by
 * PROVIDING viable Mathematical framework to analyse and comprehend efficient methodologies in Technological processes
 * DESIGNING appropriate mathematical and statistical software for industrial problems supplemented with Courseware and Teachware.
 * ESTABLISHING computer aided instructional environment equipped with a software library developed in-house.
 * TRAINING of scientists and engineers in the realm of industrial Mathematics for technical competence and human resource development.
 * DEVELOPING a Network of Indunstrial Mathematics for collaborating with local industrial units on a continuing basis.
 * CREATING FTP site for public domain numerical software packages to function as a mirror site of similar centres in the World.

Seminars in various areas have been held throughout the year. In addition, the faculty members were involved in organizing international workshops, CEP programs, national/international conferences, and in writing books. They also carried out honorary work like referee jobs for journals, reviewing projects, examining Ph.D. theses and serving on selection committees of other universities. Throughout the year, a steady stream of visitors from other institutes in India and abroad has contributed to the seminar and colloquia activities.

Academic Programmes

Besides the teaching of B. Tech. Courses, the department offers M.Sc. and Ph.D. programmes along with its research activity. It has two distinct M.Sc. programmes. M.Sc. in Mathematics (intended for those who wish to pursue research and/or teaching as their career) and M.Sc. in Applied Statistics and Informatics (ASI) (job oriented).

In addition, the Department has a research programme leading to Ph.D. degree. This programme has a broad based course work and specialization in Pure Mathematics, Applied Mathematics and Scientific Computing and Statistics.

R & D Activities

As one of the key instruments of fostering excellence in *Research & Development* in Mathematical Sciences, this programme focuses on a strong link between `**Mathematics and its Applications**'. There are not many research centers in India with this kind of focus and the Department is striving continuously for excellence in research & development in mathematical sciences
. The key objectives of the research and development activities of the department are: **Basic Research,** focusing in contemporary areas of fundamental, developmental and strategical importance,**Interdisciplinary Research,** aiming at development of multidisciplinary research teams involving mathematicians and scientists/engineers in frontier areas of Mathematics and Statistics, **Academic Interaction,** gearing towards establishment of individual and institutional contacts between the Department of Mathematics and various educational and Research & Development Organisations in the country such as major universities, TIFR, IISc, ISI, ISRO, DRDO, ONGC, Indian Meteorological Centers, etc., and nodal organisations such as CSIR, DAE, DST, etc., for

scientific exchange of ideas of national importance. In order to fulfill the broad objectives of research activities, steps are taken to ensure that, the theoretical base in emerging areas are strengthened, interdisciplinary problems requiring mathematical solutions are identified, interaction between Indian and overseas scientists are facilitated, local talents are well nurtured through lecture series and instructional workshops and by evolving a pool of trained manpower in thrust areas.

The research interests of the faculty members cover a wide range of fields:

- ∨ Algebraic Geometry, Commutative Algebra, Riemannian Geometry ,Algebraic Topology , Number Theory.
- ∨ Combinatorial Optimization & Application
- ∨ Approximation Theory, Functional Analysis and Harmonic Analysis
- ∨ Biomechanics, Mechanics of Solids and Fluids
- ∨ Industrial Mathematics & Financial Mathematics
- ∨ Computational Biology & Bio-Statistics
- ∨ Numerical Analysis & Scientific Computing
- ∨ Partial Differential Equation and Optimization & Control
- ∨ Image Processing & Pattern Recognition
- ∨ Applied Probability, Stochastic Differential Game Theory, Inference of Stochastic processes & Statistical Inference
- ∨ Reliability theory, Industrial Statistics, Geo-Statistics & Statistical Signal Processing

Faculty members undertake projects sponsored by organizations such as National Board for Higher Mathematics (NBHM), Indian National Science Academy (NSA), Board of Research in Nuclear Science (BRNC), Council of Scientific & Industrial Research (CSIR), Department of Science & Technology (DST), Department of Bio-Technology (DBT), and Indian Council of Medical Research. Some
of the important ongoing and recently completed projects are listed below:

DBT - Software Development for Ab-initio Prediction of 3D structure of Proteins using Knowledge-Based Nonparametric Regression, 2003, ongoing.

DST - *Construction of Optimal Reliability Test Plans*, 2002, ongoing.

Vistaar.com - *Issues in Designing Multidimensional Databases*, 2001, ongoing.

European Union ASIA-IT funded WEBOPT project, 2003, ongoing.

CSIR- *Analytical and Numerical Studies of Quasilinear Systems of Hyperbolic and Parabolic PDEs with Applications, 2002, ongoing.*

DST- *Workshop in Mathematics, 2003, ongoing.*

MHRD - ***On the development of interactive courseware modules in Mathematics,2003,ongoing***

A number of new initiatives have been taken in the recent past to consolidate and strengthen research & development activities and also encourage collaboration with the other Departments at IIT Bombay as well as other academic organisations and industries.

Sponsored Projects
Ghorpade S.R

Project Title: Combinatorial and computational aspects of some algebraic varieties

Sponsoring Agency: IRCC

Amount generated: 2 Lakhs

Beginning Year:

End Year:

Joshi R.R.

Project Title: Software Development for Ab-initio Prediction of 3D structure of Proteins using Knowledge-Based Nonparametric Regression

Sponsoring Agency: Dept. of Biotechnology, Govt. of India.

Amount generated: 11.76 Lakhs

Beginning Year: 2003

End Year: 2005

Neela Nataraj

Project Title: Parallelization of mixed finite element methods for source/ eigenvalue problems

Sponsoring Agency:DST

Amount generated: 5.76 Lakhs

Beginning Year: 2001

End Year: 2004

Project Title: A parallel mixed finite element implementation of IV order elliptic source/ eigenvalue problems in distributed memory environments.

Sponsoring Agency: IRCC

Amount generated: 3 lakhs

Beginning Year: 2003

End Year: 2005

Patkar Sachin

Project Title: WebOPT

Sponsoring Agency: European Union ASIA-ITC

Amount generated:

Beginning Year: 2003

End Year: 2005

Rana I.K.

Project Title: Preperation of electronic courseware and awareness Modules in Mathematics.

Sponsoring Agency: MHRD

Amount generated: 16,00,000/-

Beginning Year: 2003

End Year: 2005

Sabnis S.V.

Project Title: Study of Optimal Reliability Test Plans

Sponsoring Agency: DST

Amount generated: 6.43 lakhs

Beginning Year: 2002

End Year: 2005

Project Title: Morphological versus Molecular Approach to the Taxonomy of Foraminifers.

Sponsoring Agency: Institute Strategy and Planning Committee (ISPC), IIT Bombay (Cross-Disciplinary Research Groups)

Amount generated: 6.12 lakhs

Beginning Year: 2003

End Year: 2005

Sharma V.D

Project Title: Analytical and numerical methods for hyperbolic conservation laws with applications.

Sponsoring Agency: CSIR

Amount generated:Around 7 Lakhs

Beginning Year:2003

End Year: 2005

Subramanyam A.

Project Title: Stochatic Modelling, Analysis, and Optimization of Resource Allocation.

Sponsoring Agency: ISPC, IIT Bombay

Amount generated: 5.7 lakhs

Beginning Year: 2003

End Year: 2005

Suresh Kumar K.

Project Title: WebOPT

Sponsoring Agency: European Union ASIA-ITC

Amount generated: 30,00,000/-

Beginning Year: 2003

End Year: 2005

Project Title: Stochatic Modelling, Analysis, and Optimization of Resource Allocation.

Sponsoring Agency: ISPC, IIT Bombay

Amount generated: 5.7 lakhs

Beginning Year: 2003

End Year: 2005

Swaminathan V.

Project Title: Stochatic Modelling, Analysis, and Optimization of Resource Allocation.

Sponsoring Agency: ISPC, IIT Bombay

Amount generated: 5.7 lakhs

Beginning Year: 2003

End Year: 2005

Extension Activities

Advanced Training in Mathematics Schools (ATM) (Sponsored by NBHM)

ATM is an effort to strengthen the training programmes in Mathematics at Ph.D level There are a large number of doctoral students, postdoctoral fellows, university teachers in the universities, IITs, ISIs and various research institutes in the country. They often learn very limited amount of mathematics during their doctoral programme. One of the reasons is lack of a regular training programme atdoctoral level in most places. As a result, foundations of their knowledge remain weak although they may know a lot in the area of their research. This hampers their growth in the future and it also has a negative impact on the programme they carry out when they become faculty members. To remedy this situation a group of mathematicians from various institutes in the country have proposed a sustainable model of training at national level in the inter-related areas of algebra, analysis, partial differential equations, discrete mathematics, geometry, number theory and topology. This integrated training programme will

provide basic and advanced knowledge in these areas and emphasize their interconnections via a series of instructional schools to be held in Winter and Summer every year at various levels in about a dozen carefully selected departments of mathematics across the country. The first such school is being held at IIT Bombay. These instructional programmes will have the twin aims of training research scholars in their formative years by some of the leading researchers in the country and bringing together post-doctoral fellows, young faculty, as course associates and senior and active researchers as lecturers enable them to interact for possible research collaboration on the topics of lectures in the advanced schools.

WORM 2003

The Industrial Mathematics Group (IMG) at the Indian Institute of Technology (Bombay), Jadavpur University (Kolkata), University of Vienna (Austria), and The Centre for the Analysis of Risk and Optimisation Modelling Applications (CARISMA) at Brunel University (UK) are partners in an European Union funded project called Web enabled optimization tools and models for research, professional training and industrial deployment (WEBOPT). The main objective of the WEBOPT project is to disseminate knowledge and information in the areas of Mathematical Modeling, Optimization and Computational Algorithms among academic scientists and industrial researchers in India.

A workshop followed by one day seminar was organized in the Department of Mathematics at Indian Institute of Technology Bombay during 18-22 December 2003. The primary objective of the workshop is to introduce academics and researchers in India to modeling techniques and solution approaches for large-scale optimization problems and decision making under uncertainty and risks.It is also intended to discuss the financial planning involving portfolio selection, asset liability management models and index tracking.Last but not the least goal is to develop a network of European and Indian academicians research scientists and to increase the interaction between the academia and industry in India.

9th WORKSHOP IN MATHEMATICS

The DST Sponsored 9th Workshop in Mathematics was organized in our Institute by Prof. Inder K.Rana. from October 11th to 16th, 2003. About 45 students from colleges in western region participated in the workshop.

POPULAR LECTURE SERIES

The faculty is actively involved in various programmes, popularizing / training of mathematics such as NBHM sponsored nurture programme, Ganit Utsav organized by Bombay Mathematical Colloquium, popular lectures at Nehru Science Centre etc.

Another important activity in this direction is the Popular Lecture Series in Mathematics - a joint activity of Mathematics Association of IIT, Bombay and Bombay Mathematical Colloquium.

This was started in 1997 by the Mathematics Association of IIT, Bombay. Forty lectures have been held under this series so far on diverse topics in mathematics.
The lectures are aimed at a wide spectrum of audience. Besides mathematicians, we also invite scientists and engineers who apply mathematics in research and development in their area. The speakers are instructed to start from the basics and build their lecture so that beginners as well as experts can benefit. The series has become extremely popular among students and faculty at IIT and college teachers in Mumbai.

VISITORS TO OUR DEPARTMENT

24 July, 2003

Prof. H.Ananthnarayan, University of Kansas, USA

Tates Resolutions

30 July, 2003**Prof.R.Sridharan**, Chennai Mathematical Institute,Chennai

Lemniscate.

1 August, 2003

Prof. T.N.Sriram, University of Georgia, USA

Fixed width confidence interval based on a minimum Hellinger distance estimator.

15 September 2003

Tobias Hartnick

Profinite Groups and the Main Theorem of Galois Theory.

19 September, 2003

Prof.Ramadevi, Department of Physics,IIT Bombay,Knots,Links and Three-dimensional Manifolds

27 Octobber 2003

Dr.Abani K.Patra,University of Buffalo,New York

Modeling and Simulation of Granular Avalanches Over Natural Terrain

31 October, 2003

Prof. V.R.Sule, Department of Electrical Engg,IIT Bombay Science of Automatic Control:Paradigms and Puzzles.

3 November, 2003

Prof. Anand Srivastav, Kiel University, Germany

Randomized Approximation

21 November, 2003

Prof. Ramesh Korwar, University of Massachusetts

Recent developments in Stochastic orders for order statistics.

16 December 2003

Prof.Lokenath Debnath, University of Texas-Pan

Four Major Discoveries in Applied Mathematics

3 December, 2003**Ashwin Vaidya,** University of Pittsburgh, USAMathematical Analysis of Orientation of Rigid Bodies Sedimenting in Newtonian and Non-Newtonian Liquids

29 December**Jaydeep chipalkatti,** University of British Columbia, CanadaPolar polyhedra of algebraic forms .

2 January, 2004**Prof. K.N. Raghavan,** Institute of Mathematical Sciences, ChennaiPicture Invariants for Lie Algebras

5 January, 2004**Prof.S.A Naimpally**, Lakehead University, CanadaAll Hypertopologies are hit and miss topologies.

5 January, 2004**Prof. Parameswaran Sankaran,** Institute of Mathematical Sciences, ChennaiThe remarkable Richard Thompson groups.

13 January, 2004**Prof.Sriram Pemmaraju**, Department of Computer Science, University of Iowa Analysis of First-Fit-On-Line coloring for interval graphs.

20 January, 2004**Prof. J.Batt,** University of Munich, GermanyApproximation of Shocks by Solutions of systems of Ordinary Differential Equations

23 January, 2004**Prof.Pablo Ares Gastesi,** TIFR, MumbaiIteration in complex planes,Kleinian Groups;Complex dynamics and computers

29 January, 2004**Prof. D.V Pai** , IIT BombayStrong uniqueness in simultaneous Approximation.

Jan 31, 2003 **Prof. Dr. F. Ischebeck**, University of Muenster, Germany Vector Bundles and Projective Modules.

11 February, 2004

Dr. Swapneel Mahajan, TIFR, Mumbai

Projections, Shellings and Duality

17 February, 2004 **Dr. Akash Nanavati** Co-ordination Mechanisms

1 March, 2004 **Prof.A.D.Dharmadhikari**, Dept. of Statistics, University of Pune Design of Experiment to improve the Reliability of a component in a series system.

1 March, 2004 **Prof. B.K Sinha**, Math-Stat Unit, ISI, Kolkata Some Probabilistic and Statistical Aspects of Discovery of Species.

16 March, 2004 **Prof.H.N Mhaskar**, Dept. of Matheamtics, California University, USA Local Polynomial Operators

17 March, 2004 **Dr.J.Prajapat**, ISI, Bangalore A New Characterization of the Sphere

19 March, 2004 **Prof.Manjul Bhargava** Princeton University, New Jersey, USA Representation of Integers By Quadratic Forms

23 March, 2004 **Prof.Gunter Meyer**, Georgia Institute of Technology, Germany The Numerics of Pricing Equity Options.

List of Faculty and Specializations

Ameer Athavale (Professor- VF)

Functional Analysis

Bagai Shobha (Assistant Professor - VF)

Fluid Dynamics

Ghorpade Sudhir R. (Professor)

Algebraic Geometry, Combinatorics

Joshi K. D. (Professor)

Topology, Discrete Mathematics

Joshi Mohan C. (Professor)

Nonlinar Analysis , Control Theory

Joshi R. R. (Professor)

Computational Biology and Biostatistics, Bioinformatics

Kulkarni Rekha P. (Professor)

Numerical Functional Analysis, Spline Theory

Limaye Balmohan V. (Professor)

Functional Analysis, Numerical Analysis, Spectral Approximation

Mitra Amit (Assistant Professor)

Statistical Signal Processing

Neela Nataraj (Assistant Professor)

Finite Element methods

Pai Devidas V. (Professor)

Functional Analysis, Approximation Theory, Set-valued Analysis

Pani Amiya K. (Professor)

Numerical Analysis, Partial Differential Equations, Industrial Mathematics

Parihar K. S. (Professor)

Mechanics of Solids

Patkar Sachin B. (Associate Professor)

Combinatorial Optimization, Algorithms

Prakash J. (Professor)

Tribology

Puthenpurakal T.J (Senior Lecturer)

Commutative Algebra

Rana Inder K. (Professor)

Harmonic Analysis, Mathematics Education

Ranjan Akhil (Professor)

Differential Geometry

Sabnis S. V. (Associate Professor)

Reliability Theory, Industrial Statistics

Sharma V.D. (Professor)

Quasilinear Systems of PDEs/ Nonlinear Waves

Shastri A. R. (Professor)

Algebraic Geometry, Algebraic Topology

Srinivasan Anitha (Lecturer)

Number Theory

Srinivasan G. K. (Assistant Professor)

Partial Differential Equations

Srinivasan M. K. (Associate Professor)

Combinatorics

Subramanyam A. (Associate Professor)

Statistical Inference, Geostatistics

Sureshkumar K. (Assistant Professor)

Stochastic Differential Game Theory, Mathematical Finance.

Swaminathan V. (Assistant Professor)

Inference for Stochastic Processes

Vellaisamy P. (Professor)

Applied Probability, Statistical Inference, Industrial Statistics

Verma J. K. (Professor)

Commutative Algebra

I. Publications (Conference & Journals/Books)

Ghorpade S.R

(Book)

The Hilbert series of Pfaffian rings, in Algebra, Arithmetic and Geometry with Applications Edited by C. Christensen, C. Bajaj, G. Sundaram and A. Sathaye, pp. 337-356, Published by Springer-Verlag, New York, 2003.

C. Krattenthaler.,

(Proceedings)

Classical varieties, codes and combinatorics, in: Formal Power Series and Algebraic Combinatorics, Actes/Proceedings, K. Eriksson and S. Linusson Eds., Linkping University, Sweden, pp. 75-84(Vadstena, 2003)

M. A. Tsfasman.,

Joshi K.D

(Book)

Educative JEE Mathematics, Universities Press, Hyderabad, 2004.

Joshi R.R

(Journals)

Ab-initio Prediction and Reliability of Protein Structural Genomics by PROPAINOR, Computational Biology & Chemistry, Vol. 27(3), pp. 241-252, 2003.

S. Jyothi.

Ab-initio Computation of the 3d-Structure of Proteins by Nonparametric Statistical Methods - Medium and Short Range Distance Estimates, Sankhya, Vol. 65 (3) pp. 593-611, 2003.

S. Jyothi.

Kulkarni R.P

(Journals)

A Superconvergence Result for Solutions of Compact Operator Equations, Bulletin of the Australian Mathematical Society, pp. 517-528, 68 - 2003.

<<

A New Projection Method for Approximate Solutions of Eigenvalue Problems, Numerical Functional Analysis and Optimization, pp. 75-84, 24 - 2003.

Iterated Discrete Polynomial-based Galerkin Methods, Applied Mathematics and Computation, pp. 153-165, 146 - 2003.

N. Gnaneshwar

(Proceedings)

A New Superconvergent Projection Method, Integral Methods in Science and Engineering (IMSE 02), Analytic and Numerical Techniques, Birkhauser, Boston, Edited by M. Ahues, C. Constanda and A. Largillier, ISBN 0-8176-3228-X, 2004.

Limaye B.V

(Proceedings)

Spectral approximation for compact integral operators, International Conference on Integral Methods in Science and Technology , St-Etienne, France, August 2002, Published by Birkhauser, Boston, pp 115 to 122, 2003

Neela Nataraj

(Journal)

Performance of a parallel mixed finite element implementation for fourth order clamped anisotropic plate bending problems in distributed memory environments, Applied Mathematics and Computation, 25 September, 2003.

Kshitij Kulshreshtha, Michael Jung.

Pai D.V

(Journal)

Well Posedness of some Problems in Approximation, 70 (2003), J. Indian Mathematical Society.

On well-posedness of a some problems in Approximation Theory,ie: Advances IN Constructive Approximation : Vanderbilt 2003, Mike Neamtu and Ed Saff (eds.), ISBN 0-9728482-2-3, Nashbore Press, Brentwood, TN, 2004, USA.

Pani A.K

.

(Journal)

-Finite element methods for parabolic variational inequalities with a Volterra term, Numer Funct. Anal and Optmiz. pp.107-127, 24 - 2003.
Pradeepa Nair.
The effect of spatial quadrature on the semisiscrete finite element Galerkin method for a strongly damped wave equation, Numer Funct. Anal and Optmiz ,no. 3-4, pp.311-325, 2003.
Rajen K. Sinha, S. K. Chung.
(Proceedings)
Semi-discrete finite element method for a class of visco-elastic problems with long memory under condition of friction, Ninth International Conference on Hyperbolic Problems : Theory, Numerics and Applications, Springer Verlag, pp. 745-754, 2003.
Pradeepa Nair.
Sliding motion of discontinuous dynamical systems described by differential algebraic equations, 2002 American Control Conference, Omni Press, pp. 795-800, 2003.
Jyoti Agrawal , Kannan M. Moudgalya

Patkar Sachin

(Journal)
Fast On-line/Off-line Algorithms for Optimal Reinforcement of a Network and its Connections with Principal Partition, Journal of Combinatorial Optimization, vol. 7, no. 1, pp. 45-68, 2003.
H. Narayanan.
The Realization of Finite State Machines by Decomposition and the Principal Lattice of Partitions of a Submodular Function, Discrete Applied Mathematics (Special Issue on Submodularity), 131, pp. 299-310, 2003.
M.P. Desai , H. Narayanan.
Fitting Convex Surface to Scattered Data Points with Applications to Medical Imaging, WSEAS Transactions, vol. 3, no. 1, pp. 50-56, 2004.
Ravi S. Gautam.
(Proceedings)
A J2EE Based Design and Implementation of a Decision Support System for Scheduling in a Bearing Heat Treatment Plant, NCOOT2003: 5th National Conference on Object Oriented Technology, 2003.
B.R.S.M. Jothi, Nikhil Maheshwari , Neha Pandey

Prakash J

(Journal)

Effect of Velocity slip in a Narrow Rough Porous Bearing, Proc. Instn. Mechanical Engineers, J. Engineering Tribology, (U.K) Vol.217, pp 59-70, 2003.
K.Gururajan.

Ranjan A

(Journal)

Busemann Functions in a Harmonic Manifold, Geometriae Dedicata, 101, 2003.
Hemangi Shah.

Sharma V.D

(Journal)

On weakly Nonlinear waves in media exhibiting mixed Non-linearity, J.Math.Anal.Appl. (USA), Vol285 , pp.629-641, 2003.
Srinivasan G.K

A note on the jump conditions for systems of conservation laws, Studies in Applied .Mathematics (USA), Vol 110, pp.391-396, 2003.
Srinivasan G.K

Modulation equations of weakly non-linear geometric optics in media exhibiting mixed non-linearity, Studies in Appllied Mathematics (USA), Vol. 110, pp.103-122, 2003.
Srinivasan G.K

Propogation of strong converging waves, J.Engg..Math (Kluwer Academic, The Netherlands), Vol. 46, pp.55-68, 2003
G.Madhumita

Dissipative Waves in a Relaxing Gas exhibiting Mixed Nonlinearity, Nonlinear Dynamics (Kluwer Academic, The Netherlands), Vol. 33, pp.283-299, 2003
G. Madhumita, S.A.V. Manickam

Far Field behaviour of waves, Appl.Num.Math. (Elsevier, The Netherlands), Vol 45, pp.293-301, 2003.
Radha, G.Manickam

Srinivasan G.K

(Journal)

On Weakly Nonlinear waves in media exhibiting mixed Nonlinearity, Journal of Mathematical Analysis and Applications, Vol 285, No 2, pp 629-641, 2003.
Sharma V.D.

Energy Dissipated Across Shocks in Weak Solutions of a Scalar Conservation Law, Studies in Applied Mathematics, Vol 112, pp 281-291, 2004.
Sharma V.D.

Srinivasan M.K

(Proceedings)

An inversion number statistic on set partitions (extended abstract), Proceedings of the R.C. Bose Centenary Symposium, held in December 2002,

at Indian Statistical Institute, Kolkata, Electronic Notes in Discrete Mathematics 15, pp 84-86, 2003.

Rajendra S. Deodhar

Puthenpurakal T.J

(Journal)

Hilbert-coefficients of a Cohen-Macaulay module, Journal of Algebra, 264, pp 82-97 2003.

Vellaisamy P

(Journal)

Estimation and design of sampling plans for monitoring dependent production process, Methodology and Computing in Applied Probability, Vol. 5, pp 85-108, 2003.

S. Sankar, Taniguchi. M.

Quantile estimation of the selected exponential population, Journal of Statistical Planning and Inference, Vol. 115, pp 461-470, 2003.

Verma J.K

(Journal)

Hilbert Coefficients and Depth of Fiber Cones, Communications in algebra, Vol. 32, pp 1445-1452, 2004.

A.V.Jayanthan, B. Singh.

Bounds on the a-invariant and reduction numbers of ideals, Journal of Algebra, Vol. 274, pp 594-601, 2004.

C. D Cruz, V. Kodiyalam.

II. Conferences (organized / Participation)

S.R. Ghorpade

Title: International Conference on Commutative Algebra and Combinatorics. Organizer: Harish-Chandra Research Institute, Allahabad. National/International:NationalDetails:

Title: Joint India-AMS MeetingOrganizer: Sudhir R. Ghorpade, Hema Srinivasan , J.K. VermaSponsors: AMS, NBHM, DST.Duration: 17/12/2003 To 20/12/2003National/International:National

Details:

Title: Configuration spaces for point-sets and torus actions on Grassmannians.Organizer: IIT BombayNational/International:NationalDetails: 5th National Meeting on Commutative Algebra and Algebraic Geometry, IIT Bombay, Mumbai, April 2003.

Title: Mini Workshop on Curves over Finite Fields.Organizer: University of Mumbai.National/International:NationalDetails: Zeta functions of curves over finite fields , A series of two lectures, Mini Workshop on Curves over Finite Fileds, University of Mumbai, Mumbai, July 2003

Joshi R.R

Title: International Conference on Mathematical Biology.Organizer: Dept. of Bioscience, Bioengg. and Dept. of Mathematics, IIT Kanpur National/International: NationalDuration: 19/2/2004 To 21/2/2004Details: Talked on Statistical Data Mining Applications in Bioinformatics - Prediction of 3D Structure of Proteins

Kulkarni R.P

Title: International Congress on Industrial and Applied Mathematics, ICIAM 2003.Organizer: Sydney, Australia.National/International:InternationalDuration: 7/7/2003 To 11/7/2003Details:Talked on Extrapolation using a New Projection Method

Title: International Workshop ANODE 2003.Organizer: University of Auckland, Auckland, New Zealand. National/International:InternationalDuration: 14/7/2003 To 25/7/2003Details:Talked on a New Superconvergent Projection Method for Approximate Solutions of Compact Operator Equations.

Title: Eleventh Ramanujan Symposium on Recent Trends in Operator Theory and Banach AlgebrasOrganizer: Ramanujan Institute, University of Madras, Chennai. National/International: NationalDuration: 3/3/2004 To 5/3/2004Details: Talked on Approximate Solution of Integral Equations of the Second Kind.

Limaye B.V

Title: Approximation Methods and Orthogonal ExpansionsOrganizer: University of Tartu, Estonia National/International:InternationalDuration: 12/9/2003 To 14/9/2003Details: Talked on Improvement of Accuracy in Spectral Approximation.

Neela Natraj

Title: International Conference on Industrial Mathematics National/International:InternationalDuration: December 2003
Title: Annual Conference of Orissa Mathematical SocietyOrganizer: Orissa Mathematical SocietyNational/International: NationalDuration: February 2004

Pai D.V

Title: Advances in Constructive Approximation National/International:InternationalDuration: May 14 - 17, 2003
Details: Delivered a lecture on well-posedness of some problems in approximation theory.

Title: 69th Annual Conference of the Indian Mathematical Society National/International:NationalDuration: December 2003
Details: Delivered a lecture on Strong unicity in simultaneous approximation.

Pani A.K

Title: Eleventh MAFELAP conference on the Mathematics of Finite Elements and Applications held at Brunel University.Organizer: Brunel University (UK)National/International:InternationalDuration: 21/6/2003 To 24/6/2003Details: Talked on Finite Element Galerkin Methods for the Equations of Motions Arising in the Model of Viscoelastic Fluids.

Title: 31st OMS Conference held in the Institute of Physics, BhubaneswarOrganizer: Institute of Mathematics and Applications, Bhubaneswar National/International:NationalDuration: 7/2/2004 To 8/2/2004Details: Talked on How to Compute a Fair Price for an Option Derivative in Financial Market : A Case Study and Its Mathematical Implications.

Patkar Sachin

   Title: Foundations of Software Technology and Theoretical Computer Science Organizer: IIT BombayNational/International:InternationalDuration: 15/12/2003 To 17/12/2003

Puthenpurakal T.J

   Title: 5th Conference onCommutative Algebra and Algebraic Geometry. Organizer: IIT BombayNational/International:NationalDuration: 1/4/2003 To 5/4/2003Details: Talked on Resolutions of modules over local rings

   Title: International conference on Commutative algebra and CombinatoricsOrganizer: Bhaskaracharya Pratishthana, Pune and HRI, Allahabad.National/International: National.Duration: 8/12/2003 To 14/12/2003Details: Talked on Cohen-Macaulay modules of dimension two with generalized Cohen-Macaulay associatedgraded modules.

   Title: Session for Young Researches in Commutative Algebra and Algebraic GeometryOrganizer: Indian Institute of Science, Bangalore. National/International: National.Duration: 16/12/2003Details: Talked on Resolutions of modules over local rings.

Rana I.K

   Title: Workshop in MathematicsOrganizer: Department of Mathematics, IIT BombayNational/International: National

Sabnis S.V

   Title: Indian Society for Probability and Statistics (ISPS) Confernence. Organizer: Dept of Statistics, Nagarjuna University, Guntur (A. P.) National/International:NationalDuration: 18/12/2004 To 20/12/2004Details: Talked on Construction of Optimal Reliability Test Plans in the presence of Covaraites- Series Systems .

   Title: Fifth International Triennial Calcutta Symposium on Probability and StatisticsOrganizer: Dept of Statistics, Calcutta University and Calcutta Statistical AssociationNational/International:NationalDuration: 28/12/2004 To

31/12/2004Details: 100 (1-d)% Confidence Intervals for Parameters of Weibull Distribution Based on Samples of size one and n (> 2) **.**

 Title**:** International Symposium on Emerging Strategies for Improving Productivity, Quality and Reliability.Organizer: Indian Association for Productivity, Quality and Reliability in collaboration with Central Glass \amp Ceramic Research Institute. National/International:InternationalDuration: 12/12/2003 To 14/12/2003Details: Construction of Optimal Reliability Test Plans in the Presence of Covariates- Parallel System.

 Title: Recent Developments in Probability and Statistics Organizer: Dept of Statistics, University of Pune, Pune. National/International:National.Duration: 23/12/2003 To 25/12/2003Details: Talked on Estimation and Construction of Bounds in Prototype Testing .

Shastri A.R

 Title: India-AMS Joint MeetingOrganizer: IISc BangaloreNational/International: International.Duration: 17/12/2003 To 20/12/2003Details: Talked on Topology of Matrix Varieties

Srinivasan M.K

 Title: Third Haifa Workshop on Interdisciplinary Applications of Graph Theory, Combinatorics, and Algorithms, in honor of Peter L. Hammer. Organizer: Caesarea Rothschild Institute, University of HaifaHaifa, Israel National/International: International.Duration: 27/5/2003 To 29/5/2003Details: Talked on Threshold Graphs, the Polytope of degree sequences, and the Alternating Cone.

 Title: Operations Research with Economic and Industrial Applications. Organizer: ISI, Kolkata India. National/International:International.Duration: 8/1/2004 To 10/1/2004Details: Talked on the Alternating Cone of a 2-Colored Graph .

Subramanyam A

 Title: Golden Jubilee Conference on Recent Developments in Statistics Organizer: Department of Statistics, University of

Pune.National/International: National.Duration: 22/12/2004 To 24/12/2004Details: Talked on Cokriging and Kriging Systems.

Suresh Kumar K

Title: Queues, Inventory, Reliability, Maintenance and Replacement Organizer: Department of mathematics, CUSAT,
Kochi National/International:National.Duration: 19/2/2004 To 22/2/2004Details: Risk-sensitive portfolio optimization problem with stochastic interest
rate.

Swaminathan V

Title: Golden Jubilee Conference on Recent Developments in Statistics Organizer: Department of Statistics, University of Pune.National/International: National.Duration: 22/12/2003 To 24/12/2003Details: Talked on a Note on Geometric Ergodicity of an Asymmetric beta-ARCH Model.

Vellaisamy P

Title: Emerging strategies for improving productivity, quality and reliability Organizer: IAPQR , Department of Statistics, Calcutta University, Kolkatta. National/International: International.Duration: 12/12/2003 To 14/12/2003Details:Talked on Optimal component reliabiltiy test plans for a parallel system based on Type-II censoring.

Title: International Workshop on Applied ProbabilityOrganizer: M.V Koutras, University of Piraeus, Greece.National/International: International.Duration: 21/3/2004 To 24/03/2004Details: Talked on Poisson Approximation for (k1, k2)-events via Stein-Chen method.

Verma J.K

Title: International Conference on Commutative Algebra and Combinatorics Organizer: W. Bruns, N. V. Trung, R. A. Rao, R. V. Gurjar, S. A. Katre, S. D. AdhikariSponsors: DST, NBHM, IMU, ICTP.National/International:

International.Duration: 8/12/2003 To 13/12/2003Details: Talked on Hilbert coefficients and depth of form rings and fiber cones.

Title: First Joint AMS-India Meeting - special session in commutative Algebra.

Organizer: J.K Verma, S.R.Ghorpade, H.SrinivasanSponsors: NBHM, Indian Academy of Sciences, Indian National Science AcademyNational/International: International.Duration: 17/12/2003 To 20/12/2003.

Title: 5th National Conference on Commutative Algebra and Algebraic GeometryOrganizer: S. Kumaresan,Ravi A. Rao, J. K. Verma. Sponsors: NBHM, TIFR, Mumbai University. National/International: National.Duration: 1/4/2003 To 5/4/2003

III. Invited Lectures

Ghorpade S.R

Venue: Institut de Mathmatiques de Luminy, Marseille, France
Title: Configuration spaces, Grassmannians and rings of invariants
National/International: International
Duration: June 2003

Venue: Universit degli Studi di Perugia, Perugia, Italy
Title: Enumeration of MDS codes with applications to algebraic geometry
National/International: International
Duration: June 2003

Venue: Christian-Alberchts Universit Kiel, Kiel, Germany
Title: Error free transmission and algebraic geometry.
National/International: International
Duration: June 2003

Venue: Purdue University, West Lafayette, USA
Title: Geometry and Combinatorics of Schubert varieties and determinantal varieties National/International: International
Duration: January 2004

Venue: Department of Mathematics Colloquium, Purdue University, West Lafayette, USA
Title: Number of points of varieties over finite fields National/International: International
Duration: February 2004

Venue: Georgia Institute of Technology, Atlanta, USA
Title: Grassmannians and codesNational/International: International
Duration: March 2004

Venue: Pennsylvania State University, State College, USA
Title: Some inequalities for the number of points of varieties over finite fields
National/International: International
Duration: March 2004

Venue: R.D. National College, Bandra, Mumbai
Title: Numbers and functions
National/International: national
Duration: July 2003

Venue: Indian Institute of Science, Bangalore
Title: Combinatorial and computational aspects of Hilbert functions and Cohen MacaulaynessNational/International: national
Duration: December 2003

Kulkarni R.P

Venue: The Australian National University, Canberra, Australia
Title: A New Projection Method for Eigenvalue Problems and Operator Equations
National/International: International
Duration: June 23rd , 2003

Venue: Department of Mathematics, University of waikato, Waikato, New Zealand
Title: Iterative Computation of EigenelementsNational/International: International
Duration: July 24th , 2003.

Mitra Amit

Venue: SPJain Institute of Management Research, Mumbai, India
Title: Statistical and artificial intelligence datamining techniques and their applications in financeNational/International: National
Duration: May/June , 2003.

Venue: Reserve Bank of India Staff College, Chennai
Title: Regression analysis and related econometric techniques.
National/International: National
Duration: February, 2003.

Neela Nataraj

Venue: Technical University, Dresden.Title: (I) On some mixed finite element methods for fourth order elliptic problems.(II)A mixed finite element method for fourth order elliptic source/eigenvalue.National/International: International
Duration: October 22nd To November 7th , 2003.

Venue: Dr. Baba Saheb Ambedkar Technological University, Lonere. Title: Finite ElementMethods. National/International: National
Duration: November 2003.

Pai D.V

Venue: Department of Mathematics, California state University Title: Strong Uniqueness of best simultaneous approximation with bounded constraintsNational/International: International
Duration: May 2003.

Pani A.K

Venue: Ravenshwa College, Cuttack.
Title: Financial Mathematics and Its Prospects National/International: National
Duration: February 9th , 2004.

Venue: Department of Applied Mathematics, MS University, Baroda.
Title: Scientific Computing: Linear Solvers National/International: National
Duration: December 2nd , 2003

Venue: Department of Mathematics, University of Mumbai Title: Option Derivatives in Financial Market National/International: National

Duration: February 16th , 2003.

Venue: Institute of Physics, Bhubaneswar
Title: A Quick Tour to the Theory of Distributions National/International: National

Duration: February 10th , 2004.

Venue: Institute of Physics, Bhubaneswar
Title: Basic Ingredients of Sobolev Spaces National/International: National

Duration: February 11th , 2004.

Puthenpurakal T.J

Venue: Pune UniversityTitle: Local CohomologyNational/International: National

Duration: July 7th To 12th , 2003

Sabnis S.V

Venue: Dept of Mathematics, IIT BombayTitle: Sample Size MethodologyNational/International: National

Duration: October 11th To 16th , 2003.

Venue: Ahmednagar
Title: Case studies in Industrial Statistics National/International: National
Duration: 29th October-18th November, 2003

Venue: Dept. of Mathematics University of Mumbai, Kalina, Mumbai
Title: Theory of MartingalesNational/International: National
Duration: 16th February-10th March, 2004.

Venue: Conceicao Rodrigues College of Engineering.
Title: Statistical Techniques for Pattern Recognition.National/International: National
Duration: 16th February-20th March, 2004.

Sharma V.D

Venue: Dept. of Mathematics, B.H.U, Varanasi
Title: On Quasilinear hyperbolic equations/systems of PDEs.National/International: National
Duration: June, 2003.

Venue: IISc, BangaloreDetails: International conference on Non-Linear phenomenon of wavesNational/International: International
Duration: 5th January, 2004.Title: On resonantly interacting waves.

Venue: Dr. B.R Ambedkar University, Agra.Details: National conference on Information Technology, Operations research and ComputingNational/International: National
Duration: 10th April, 2004.Title: Quasilinear hyperbolic system and associated wave phenomenon.

Shastri A.R

Venue: Bangalore
Title: Topology of Matrix Varieties National/International: International
Duration: December 19th , 2003.

Venue: Dept of Stat.-Math. ISI Kolkatta.
Title: Matrix VarietiesNational/International: National
Duration: June 6th , 2003.

Venue: Deparement of Mathematics, IIT Guhawati Title: An Invitation to Polyhedral Topology National/International: National
Duration:October 1st , 2004.

Venue: Department of Mathematics, N.E. H. U. Shilllong
Title: Neighborhood Complexes and Chromatic Numbers National/International: National
Duration: October 3rd , 2003.

Srinivasan M.K

    Venue: Department of Mathematics,University of Pune, Pune.

    Title: Introduction to Combinatorial Reciprocity National/International: National

    Duration: July 7th To 12th , 2003.

Subramanyam A

    Venue: Department of Mathematics, University of Mumbai

    Title: Cox, Ross, and Rubinstein Model National/International: National

    Duration: February 23rd To 24th , 2004.

Suresh Kumar K

    Venue: Department of Mathematics, Dr. Babasahab Ambedkar Technological University, Lonere.

    Title: Z-TransformsNational/International: National

    Duration: November 23rd To 24th , 2003

    Venue: Department of Mathematics, IIT Bombay

    Title: Introduction to ProbabilityNational/International: National

    Duration: October 11th To 16th , 2003

Swaminathan V.

    Venue: Department of Mathematics, University of Mumbai Title: Time Series Models in Finance National/International: National

    Duration: February 25th To 26th , 2004

    Venue: Department of Mathematics, IIT Bombay

    Title: Introduction to Statistical Inference National/International: National

    Duration: October 11th To 16th , 2003

Verma J.K.

    Venue: Harish-Chandra Research Institute, Allahabad Title: Hilbert coefficients and depth of form rings and fiber cones National/International: International

    Duration: December 12th , 2003

Venue: Indian Institute of Technology Bombay Title: Isometries of Eucildean spaces National/International: National

Duration: October 11th To 16th , 2003.

Venue: Pune UniversityTitle: Stanleys solution of the Anand-Dumir-Gupta Conjecture National/International: National

Duration: July 7th To 12th , 2003.

Venue: Harish-Chandra Research Institute, Allahabad Title: Invariant rings of finite groups National/International: National

Duration: January 8th To 11th , 2003.

Venue: Homi Bhabha Centre for Science Education, TIFR, Mumbai Title: Regular Polyhedra and Euclid\sq s Last Proposition National/International: National

Duration: July 15th , 2003.

Venue: Tata Institute of Fundamental Research, Mumbai Title: Euclid s last proposition National/International: National

Duration: September 28th , 2003.

IV. Honorary Work
Ghorpade S.R

Member, Council of Editors, Resonance [A Journal of Science Education published by the Indian Academy of Sciences, Bangalore], 2003 onwards.

Co-opted Member, Board of Studies in Mathematics, University of Mumbai [2000-2005], Universtiy of Pune [2001-2006], and Shivaji University, Kolhapur [2002-2005].

Invited participant in the Discussion Meeting about the formation of a virtual Indo-French Institute of Mathematics (supported by the CNRS and the Ministry of Research in France and the DST and NBHM in India), Embassy of France in India, New Delhi, February 2004.

Joshi R.R.

Reviewer/Referee for papers submitted to the International Journals V (i) Biosilico (ii) Jnl. of Mol. Model.

External examiner for one Ph.D thesis from Pune University.

Limaye B.V

Member of the International Steering Committee of IMSE-2004 (the Eighth International Conference on Integral Methods in Science and Engineering being held at the University of Central Florida, Orlando, Florida in August, 2004.

Mitra Amit

Examined Ph. D. Thesis and took the VIVA Voce examination of one thesis from IISC Bangalore and one from Berhampur University.

Editorial job for DEDS journal.

UGC External Member.

Neela Nataraj

Referred a Ph.D thesis.
Refereed papers for Calcolo and Journal of Sound and Vibration.
Pai D.V
Worked as a member, PAC-MS, SERC, DST, Government of India

Worked as a referee for the work of rating of a faculty member for the National Research Council of South Africa

Refereed several research projects for DST, Govt. of India.

Pani A.K

Evaluation Ph. D. Thesis from IISC Bangalore and one from Berhampur University and editorial job for DEDS Journal.

Refereed papers for the journals: Numer. Meth. PDE, IMA J. Numer. Anal., SIAM J. Numer Anal.

Director of UNESCO sponsored National Workshop on Industrial Mathematics and Co-ordinator of WORM-03.

Patkar Sachin

Referee for Maths of OR.

Referee for VLSI Design

Prakash J

Reviewer for Zentral hlatt for Mathematik.

Referee for Proceeding Instition of Mechanical Engineers (U.K)

Referee for Transactions of ASME (USA).

Sabnis S.V.

Reviewed 2 conference papers.

Examined a Ph.D Thesis from Shivaji University.

Sharma V.D

Served as a member of the Selection committee for faculty recruitments at IIT Delhi, IGNOU (New-Delhi), NEHU (Shillong) and South Gujarat University (Surat).

Examined the Ph.D Thesis for BHU, Agra University and University of Kerala.

Reviewer for Mathematical Reviews (USA) and Zentralblatt MATH (Germany).

Shastri A.R.

Reviewed 8 papers for Math. Review.

Refereed two papers for international journals

Refereed a book for TRIM series.

Srinivasan M.K.

Referee for 1 Doctoral Thesis (University of Mumbai).

Referee for 2 Papers in International Journals.

Subramanyam A.

Refereed 1 Doctoral Thesis (Mumbai University).

Vellaisamy P.

Served as a subject expert for faculty selection in the department of statistics, University of Pune.

Evaluated a PhD thesis from (i) Osmania University (ii) B.H.U. Varnasi.

Verma J.K.

Refreed papers for Journal of Algebra, Communications in Algebra, Proceedings of Lisbon (Spain) conference in Commutative Algebra.

Member, Mathematics Nurture Programme Committee of NBHM.

Secretary, Advanced Training in Mathematics Schools, supported by NBHM.

V. Consultancies

Mitra Amit

Project Title: Testing and calibration of ANN module of XLMiner datamining software.
Sponsoring Agency: Quantlink Solutions, Cytel CorporationAmount generated: 54,000
Beginning Year: 2003
End Year: 2003
Project Title: Preparing software implementation document and guidance to XLMiner team for implementation of SOM
Sponsoring Agency: Quantlink Solutions, Cytel CorporationAmount generated: 54,000
Beginning Year: 2003
End Year: 2004

Patkar Sachin

Project Title: Technical description and classification of packet shaper 1500.
Sponsoring Agency: Teledatacom
Amount generated: 5000/-
Beginning Year: 2003
End Year: 2003
Project Title: Analysis a resource allocation problem
Sponsoring Agency: Det Norsk Veritas
Amount generated: 25000/-

Beginning Year: 2003

End Year: 2003

Sabnis S.V.

Project Title: Statistical Analysis of Entrance Test Data

Sponsoring Agency: Dr. D.Y. Patil Vidyapeeth, New Mumbai

Amount generated: 9701/-

Beginning Year: 2003

End Year: 2003

Project Title: Time Seires modelling of Inventory Data.

Sponsoring Agency: Tata Infotech

Amount generated: 54648/-

Beginning Year: 2003

End Year: 2003

VI. Faculty Participation in Workshops/Seminars
Ghorpade S.R.

Title: Configuration spaces for point-sets and torus actions on Grassmannians Organizer:
IIT Bombay

National/International: National

Duration: April 2003

Details: 5th National Meeting on Commutative Algebra and Algebraic Geometry.

Title: Mini Workshop on Curves over Finite Fields Organizer: University of Mumbai

National/International: National

Duration: July, 2003

Details:. Zeta functions of curves over finite fields, a series of two lectures.

Mitra Amit

Title: Workshop and Seminar on Optimization and Risk Modelling (WORM-
03) Organizer: IIT BombayNational/International: International

Duration: 18th To 22^{nd}DecemberDetails: Part of the Organizing Committee of WORM-
03.

Pani A.K.

Title: National Workshop on Wavelet Theory and ApplicationsOrganizer: Institute of Mathematics and Applications, Bhubaneswar National/International: National

Duration: 7th To 11thFebruary

Title: Higher Order Methods for nonlinear hyperbolic equations Organizer: Isaac Newton Institute for Mathematical Sciences at Cambridge National/International: International

Duration: 26th To 30th MayDetails: This was a part on half year long programme on Computational Challenges in Partial Differential Equations during 20 January to 4 July 2003 which was organised by M Ainsworth (Strathclyde), CM Elliott (Sussex), E Sli (Oxford) the Isaac Newton Institute for Mathematical Sciences at Cambridge.

Title: WEBOPT projectOrganizer: CARISMA at Brunel University

(UK) National/International: International

Duration: 3rd To 5thJuneDetails: Participated in the inaugural meeting and the workshop from June

in Brunel University (UK) under the WEBOPT project jointly

with Industrial Mathematics Group at IITB, Jadavpur University

(Kolkata), CARISMA at Brunel University (UK)

and Vienna University (Austria).

Title: 11th Oxford and Cambridge Applied Mathematics Meeting . Organizer: Oxford Center for Industrial and Applied Mathematics, Oxford

University National/International: International

Duration: 19th June, 2003Details: Participated in the 11th Oxford and Cambridge Applied Mathematics

Meeting held at Mathematical Institute in the Oxford University.

Title: Symposium on Mathematics Education in Primary and Secondary Schools of OrissaOrganizer: A.K PaniNational/International: National

Duration: 8th February, 2004Details: Participated and gave a general talk on secondary education in the Symposium on Mathematics Education in Primary and Secondary Schools of Orissa.

Patkar Sachin

Title: Workshop and Seminar on Optimization and Risk Modelling (WORM-03) Organizer: Industrial Mathematics Group, Dept. of Mathematics, IIT Bombay National/International: International

Duration: 18th To 22nd December.Details: Part of the Organizing Committee of WORM-03.

Rana I.K

Title: 9th Workshop in MathematicsOrganizer: Dept. of Mathematics, IIT Bombay National/International: International

Duration: 11th To 16^{nd}October.Details: Organized the Workshop.

Suresh Kumar K

Title: Workshop and Seminar on Optimization and Risk Modelling (WORM-03) Organizer: Industrial Mathematics Group, Dept. of Mathematics, IIT Bombay National/International: International

Duration: 18th To 22^{nd}December.Details: Part of the Organizing Committee of WORM-03.

Verma J.K

Title: Workshop in Arithmetic GeometryOrganizer: Harish-Chandra Research Institute, AllahabadNational/International: National

Duration:23rd To 1^{st}January.Details: Member of the Organizing Committee.

Title: Workshop in MathematicsOrganizer: Dept. of Mathematics, IIT Bombay National/International: National
Duration: 1 week.Details: Delivered 4 lectures on Isometries of Euclidean Spaces.

Title: Workshop in Combinatorics and Commutative Algebra Organizer: University of PuneNational/International: National

Duration: 7th To 11^{th}JulyDetails: Member of the Organizing Committee which was supported by DST.

VII SIGNIFICANT AWARDS & DISTINCTIONS

Pani A.K

Professor Sankar Prasad Mishra Memorial Lecture on How to Compute a Fair Price for an Option Derivative in Financial Market : A Case Study and Its Mathematical Implications in the 31st OMS Conference held in the Institute of Physics, Bhubaneswar during 7th to 8th February 04.

Member of the Editorial Board of Differential Equations and Dynamical Systems (DEDS) : An International Journal for Theory and Applications and International Journal of Numerical Analysis and Modelling.

Chaired a session in the eleventh conference on the Mathematics of Finite Elements and Applications (MAFELAP) held at Brunel University during 21 -24 June, 2003.

Sharma V.D

Recipient of Best Teacher Award for Excellence in Teaching for the year 2003, awarded by IIT Bombay.

Appointed as a Member of the National Committee on Scientific matters related with International council of scientific union (ICSU), International union of Theoritical and Applied Mechanics and International Mathematical union by the Indian National Science Academy (INSA), New Delhi.

Member of the Advisory Committee for the Centre for Advanced Studies (CAS), in Fluid mechanics, Dept. of Mathematics, Bangalore University, Bangalore.

STATISTICAL INFORMATION OF DEPARTMENT

Student Intake:

M.Sc - 35

Ph.D - 6

Degrees Awarded:

M.Sc - 41

Ph.D - 5

Sponsored Projects:

Ongoing Projects (No.) - 13

Faculty Involved - 10

Consultancy:

No. of Faculty involved - 3

Income generated - more than 2 lakhs

Faculty / Scientific staff publications:

Books/ Chapter in Book - 2

Papers in Int ernational Journals - 23

Papers in National Journals - 2

Papers in Proceedings - 8

Faculty Participation in Conferences/ Workshops/ Seminars:

International Conference/ Workshops (abroad) - 7

International Conference/ Workshops (in India) - 9

National - 17