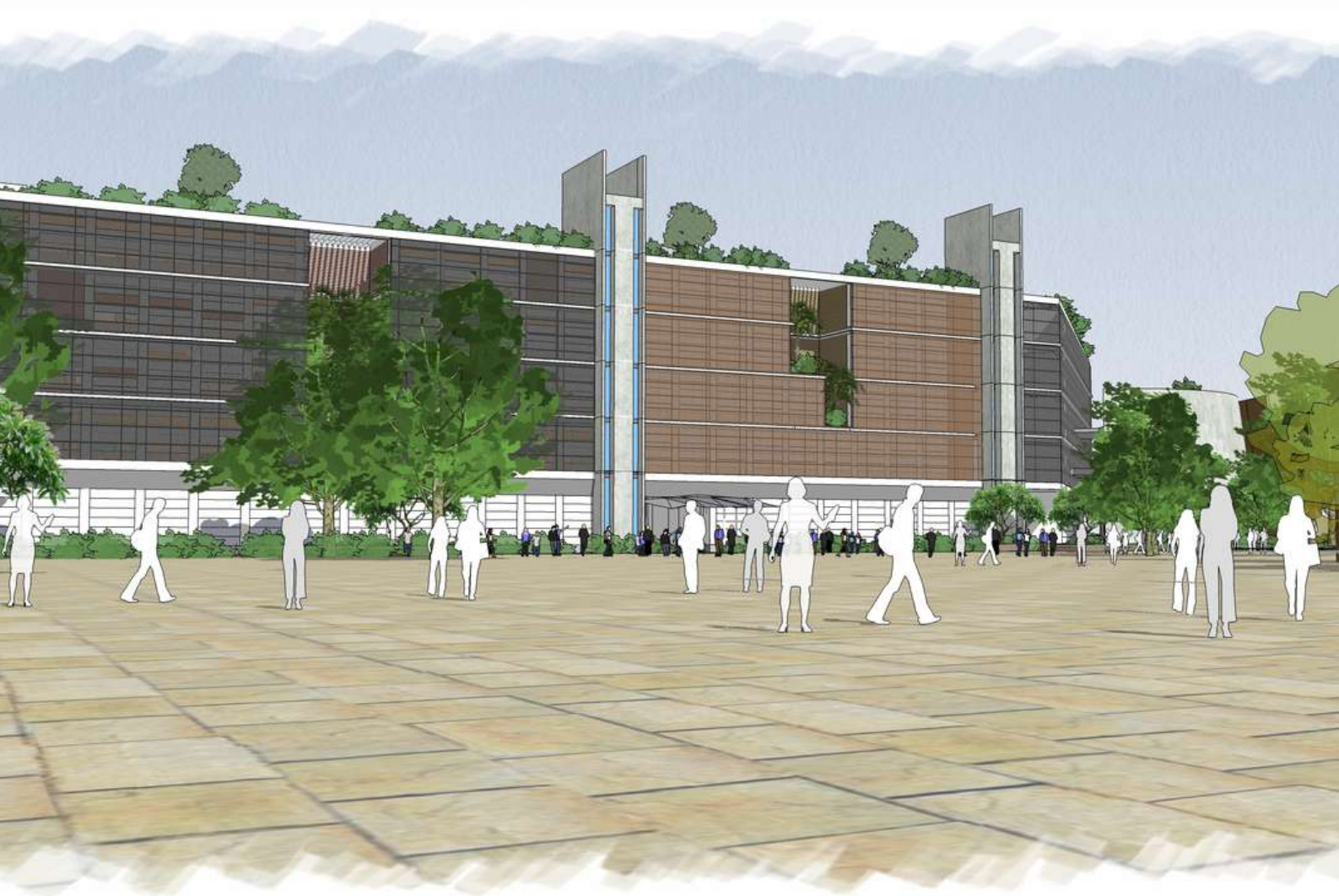
భారతీయ సాంకేతిక విజ్ఞాన సంస్థ హైదరాబాద్
भारतीय प्रौद्योगिकी संस्थान हैदराबाद
Indian Institute of Technology Hyderabad

DEPARTMENT OF MATHEMATICS

DEPARTMENT OF MATHEMATICS
IIT HYDERABAD

BROCHURE



ABOUT OUR DEPARTMENT

The Department of Mathematics is one of the six departments that was founded along with the Institute and offers programmes at the bachelor, master, and doctoral levels. Since its inception, the department has made a conscious effort to grow in sync with the directions of the Institute and an awareness of the larger needs of society. In consonance with this philosophy, the department envisages the following:

"To foster eclecticism and excellence in mathematical education and research which is well poised between abstraction and application."

TEACHING WORKHORSE

~8,000	3:1	10%
Average Annual Student Credits Offered by the Deparment	External vs Internal Student credits Ratio	Overall Student Credits offered by the Department

22
Fulltime Faculty

10
Excellence in Teaching Awards Bagged

80
Unique Courses offered Annually

7
Average Annual Teaching Credits per Faculty

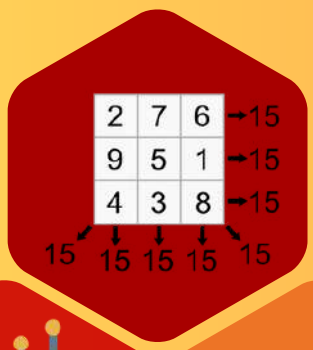
OUR INFRA

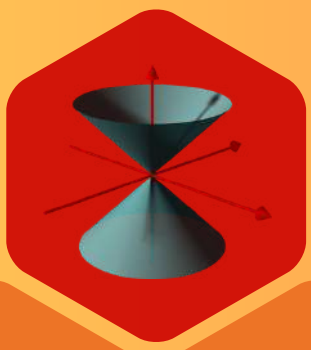
The department is equipped with the required in-house computing power including a integrated-cooling smart rack system hosting multiple GPU servers.

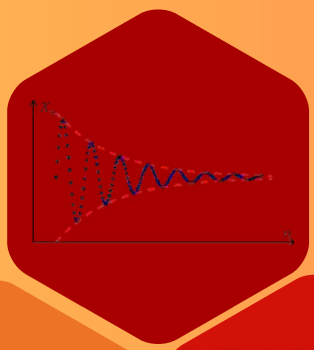
01
# of Technical Staff

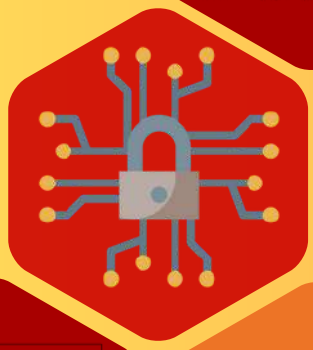
01
 # Non-Technical Staff

RESEARCH PROFILE



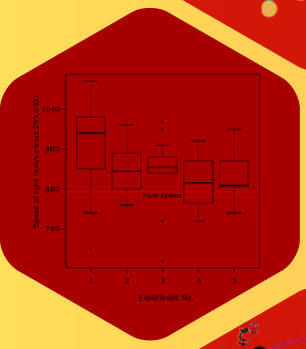






Number Theory

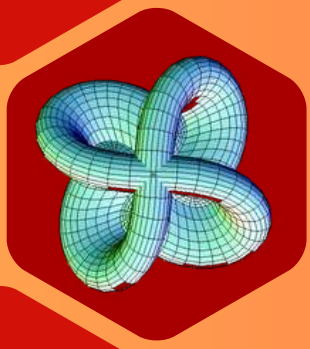
Analysis

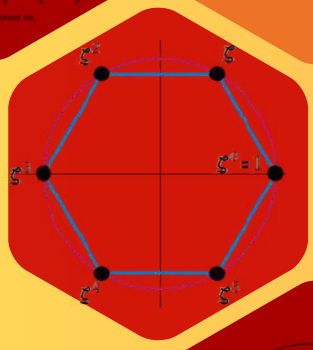


Statistics

Research Areas

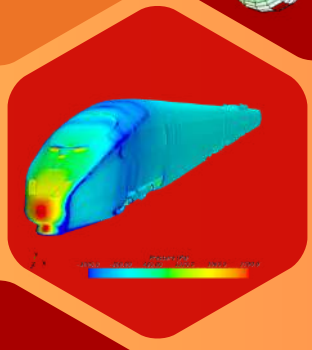
Differential Equations

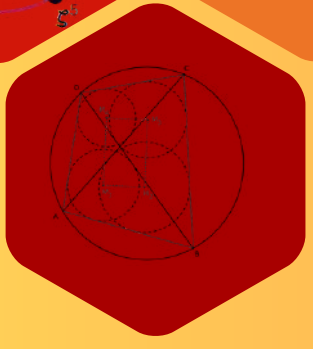


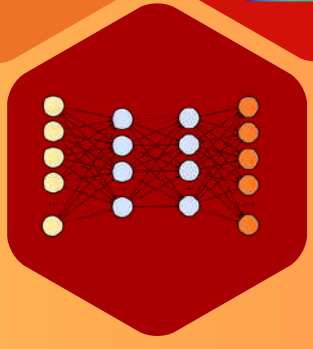


Algebra & Geometry

Computational Intelligence







RESEARCH AREAS

Analysis

- Functional Analysis
- Harmonic Analysis
- Operator Theory
- Differential Geometry
- Analysis on Banach spaces
- Time-Frequency Analysis
- Riemannian Geometry
- Modular Forms
- Matrix Analysis

Algebra

- Algebraic Geometry
- Commutative Algebra
- Algebraic Number Theory
- Classical Number Theory
- Elementary Number Theory
- Algebraic Coding Theory
- Algebraic & Spectral Graph Theory
- Combinatorics

Differential Equations

- Nonlinear PDEs
- Homogenization of PDEs
- Calculus of variations
- Hydrodynamic stability
- Biofluid Mechanics
- Quantum Mechanics
- Fluid Dynamics
- Vortex Dynamics

Statistics

- Reliability Theory, Applied Statistics, Stochastic Orders and System Signatures
- Biostatistics and computational statistics
- Spatio-temporal modelling
- Quadrature approximations
- Multivariate, skewed and volatile distributions
- Data mining for big data
- Adaptive designs
- Monte Carlo simulations
- Data mining for big data

Computational Intelligence

- Sparse Representation
- Wavelets
- Data-driven learning methods
- Knowledge Discovery
- Approximate Reasoning
- High Dimensional Data Analysis
- Inverse problems

RESEARCH STATISTICS

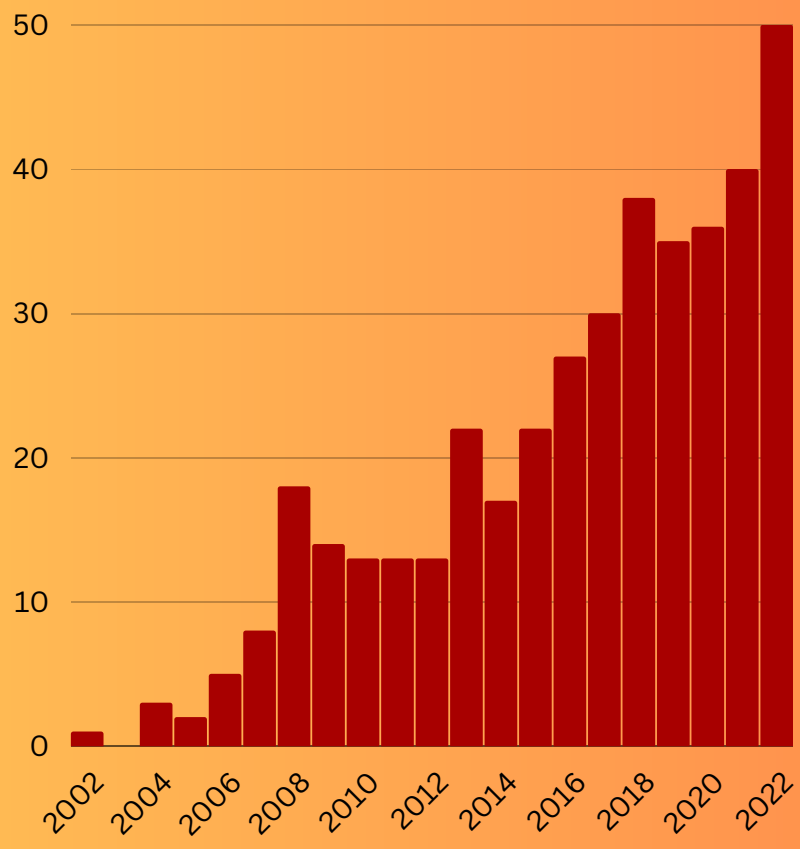
Pursuant to our vision, the department is well on its way to becoming a world-class center for theoretical, applicable, and interdisciplinary research.

PUBLICATIONS

428
PULICATIONS

3911
CITATIONS

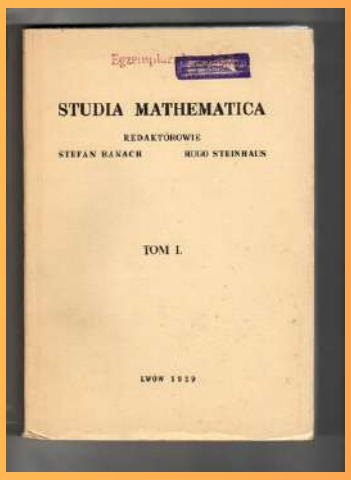
20
H-INDEX

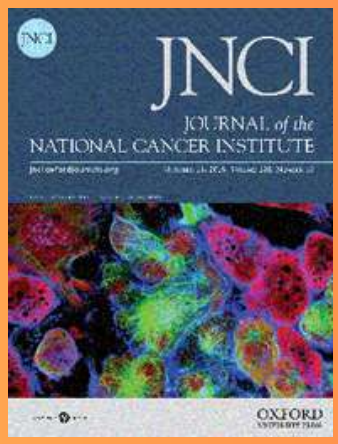


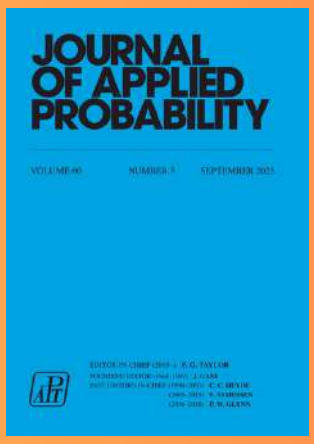
Yearwise Publication Numbers

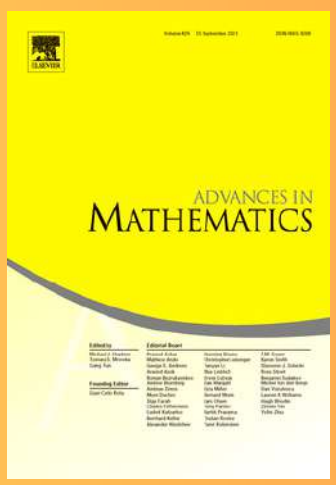
27	2.71 CR	23
Doctoral Graduates since 2015	Research Grant	R&D Projects

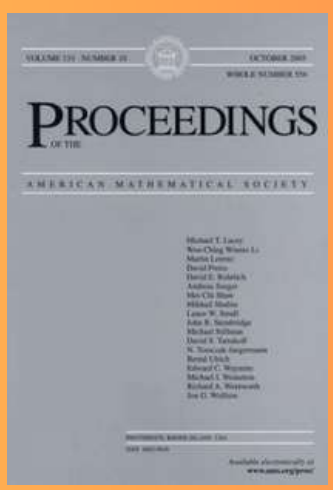
VENUES WHERE WE PUBLISH











RESEARCH PARTNERS

Faculty members of the department are engaged in an active collaboration with eminent researchers from a spectrum of globally renowned institutions.

DTU

THE ARCTIC UNIVERSITY OF NORWAY • UIT •

uOttawa

UNIVERSITY OF TORONTO

JKU JOHANNES KEPLER UNIVERSITY LINZ

東京大学 THE UNIVERSITY OF TOKYO

RITSUMEIKAN UNIVERSITY

Fraunhofer ITWM

UNIVERSITÄT HEIDELBERG ZUKUNFT SEIT 1386

AVANCEZ 1829

UNIVERSITAS STUDIORUM MEDIOLANENSIS

UNIVERSITY OF CALIFORNIA LET THERE BE LIGHT SAN DIEGO

KYOTO UNIVERSITY KYOTO JAPAN FOUNDED 1897

FUNDING PARTNERS

The faculty members of the department are members of active projects and research grants offered by both public and private enterprises.

एन बी एच एम NBHM ATOMS IN THE SERVICE OF THE NATION राष्ट्रीय उच्चतर गणित बोर्ड National Board for Higher Mathematics

SERB INDIA

सत्यमेव जयते
Department of Science and Technology
Ministry of Science and Technology
Government of India

वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद् CSIR·INDIA

NPCI भारतीय राष्ट्रीय भुगतान निगम NATIONAL PAYMENTS CORPORATION OF INDIA

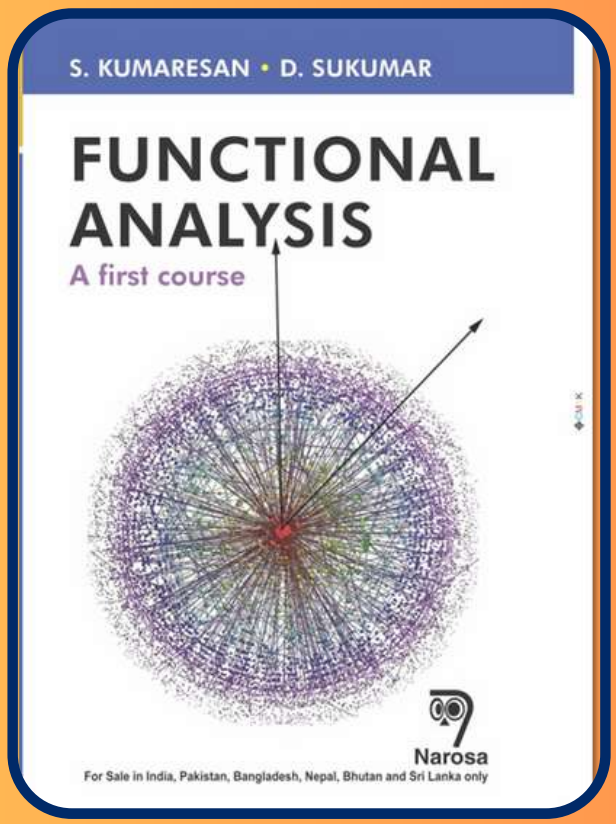
BOOKS BY OUR FACULTY

" The book, by the best knowledge of the reviewer, the very first book in this area, is well written and full of novel results and/or using references to the latest publications. Such a book introducing not only theoretical but also applicational aspects of fuzzy implications, which are unfortunately very often neglected by a certain subpart of the community of practitioners, was highly desirable".

Prof. Vilem Novak, Review on Zentralblatt

" The book is written in an MTTS style of teaching where the students take an active part in solving mathematical problems. It contains a sufficient number of exercises with hints which are helpful in enhancing the reader's understanding. It also has abundant examples supporting the results proved in the book. This benefits the beginner in understanding the subject. It also covers a few advanced topics so that first-year Ph.D. students can use it.".

Review from Amazon



FACULTY HONORS

Our faculty members are on the panel of editors of reputed journals, project review committees, and resource persons of national level Math programmes conducted by several Govt agencies like NBHM and state science academies.

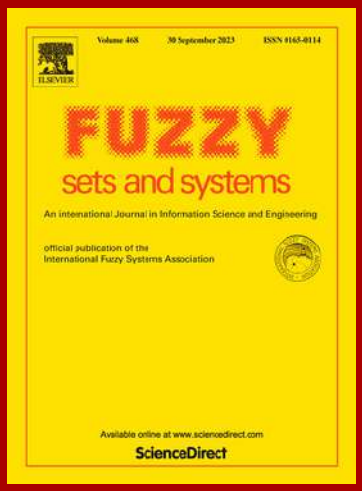
VISITING POSITIONS / FELLOWSHIPS

RITSUMEIKAN UNIVERSITY

VELUT ARBOR ÆVO

Alexander von Humboldt
Stiftung/Foundation

EDITORIAL POSITIONS



Kybernetika
International journal of Institute of Information Theory and Automation

IEEE TRANSACTIONS ON
FUZZY SYSTEMS
A PUBLICATION OF THE IEEE COMPUTATIONAL INTELLIGENCE SOCIETY

OUR ALUMNI AS FACULTY IN CFI

Dr. Deepika Neela
Assistant Professor,
NIT Warangal

Dr. Geethika Sebastian
Assistant Professor,
NIT Calicut

Dr. Nageswara Rao Vemuri
Asst Prof, Univ of Hyderabad

Dr. Neeru Bala
Assistant Professor,
IIT (ISM) Dhanbad

Dr. Pradip Sasmal
Assistant Professor,
IIT Jodhpur

Dr. Ramu Naidu
Assistant Professor,
IIPE Visakhapatnam

Dr. P. Santhosh Kumar
Assistant Professor,
IISER Mohali

Dr. Sivarama Krishna
Assistant professor,
NIT Srinagar

MATH FOR SOCIETY

The department conducts a one-day annual symposium on Mathematics to commemorate the birth anniversary of the legendary mathematician Srinivasa Ramanujan. The participants present their recent works and the event is well attended by both research scholars and faculty members from nearby engineering institutions.

Towards giving a fillip to their interests in Mathematics, every summer the department conducts a workshop for nearby Govt school students. The students are typically from the 6th - 8th grades. The entire program is ably handled by the masters and doctoral students of the department, with unhindered support from the institute administration.

The department also conducts a one-day workshop to students of Bachelors in Mathematics programs from nearby Govt colleges. This is done with a main motive of bringing awareness about the higher education opportunities and also to position the different areas of mathematics vis-a-vis their aesthetics and utility.

With the twin aim of exposing them to good trends in the teaching of mathematics and urging them to explore potential avenues for collaborative research, the department conducts a day's workshop to teachers from nearby govt degree colleges. Faculty members of the department actively engage in discussions with them, often presenting some basic topics from different perspectives to enhance their ability to articulate concepts in an immersive and an out-of-the-textbook way.

With a view of both a timely overview of some hot research topics and also towards providing alternative perspectives on well-researched topics that can be beneficial to both lecturers and research scholars, the department has been organising workshops by bringing together reputed mathematicians, young researchers, and graduate students from across the nation for fruitful discussions and exchange of ideas for research collaborations. The event typically includes tutorial sessions, invited talks, contributed talks, poster presentations, round-table and open-problem sessions.

-Designed by Shantam & Akash