Indian Women and Mathematics
Regional Workshop on Research and Opportunities
5th & 6th October 2024
Central University of Tamil Nadu
(Funded by National Board for Higher Mathematics (NBHM))

Day 1 (5th October 2024)		
7:30 - 8:30 AM	Breakfast	
9:00 - 10:00 AM	Registration/Team building activity	
10:00 - 11.30 AM	Inaguration & High Tea	
11:30 - 12:20 AM	Lecture 1	Speaker : **Clare D'Cruz,** CMI Chennai Title : **Symbolic and set theoretic complete intersection** Chair : **Riddhi Shah,** JNU New Delhi
12:30 - 1:20 PM	Lecture 2	Speaker : **R. Balasubramanian**, IMSc Chennai Title : **Introduction to additive combinatorics** Chair : **Amber Habib,** SNU Delhi
1:20 - 3:00 PM	Lunch break	
3:00 - 3:50 PM	Lecture 3	Speaker : **V Uma**, IIT Madras Title : **K - theory of cellular varieties** Chair : **Clare D'Cruz,** CMI Chennai
4:00 - 4:50 PM	**Poster Presentation & Tea Break**	
5:00 - 5:50 PM	Lecture 4	Speaker : **Amber Habib**, SNU Delhi Title : **2x2 Real Matrices: a melting pot for mathematics** Chair : **N Barani Balan,** CUTN
6:00 - 7:00 PM	**Panel discussion on career oppurtunities**	
7:30 - 9:00 PM	Dinner	

Day 2 (6th October 2024)		
7:30 - 8:30 AM	Breakfast	
9:00 - 9:50 AM	Lecture 5	Speaker : **Jotsaroop Kaur**, IISER Mohali Title : **Fourier series: Classical and Modern Aspects** Chair : **V Renuka Devi,** CUTN
10:00 - 10:50 AM	Lecture 6	Speaker : **Anand Sawant**, TIFR Mumbai Title : **Central extensions of algebraic groups revisited** Chair : **Jotsaroop Kaur,** IISER Mohali
10:50-11:20 AM	Tea break	
11:20 - 12:10 PM	Lecture 7 (Online)	Speaker : **Neena Gupta**, ISI Kolkata Title : **On A^2 - fibration over a PID** Chair : **Anand Sawant,** TIFR Mumbai
12:15 - 1:00 PM		Closing session
1:00 - 2.30 PM		Lunch

Lecture 1	Speaker	: **Clare D'Cruz, CMI, Chennai**
	Title	: Symbolic and set theoretic complete intersection
	Abstract	: We will explain how symbolic powers play an important role in the problem of set-theoretic complete intersection. We will also explain some examples. (This is joint work with Mousumi Mandal and J. K. Verma)
	Email ID	: clare@cmi.ac.in
	Chair	: Riddhi Shah, JNU, New Delhi

Lecture 2	Speaker	: **R. Balasubramanian, IMSc Chennai**
	Title	: Introduction to additive combinatorics
	Abstract	: Erdos conjectured that if A is a subset of integers with positive density, then for any $k > 0$, A contains an Arithmetic Progression of k terms. In fact, he even made a stronger conjecture that it remains true if the reciprocal of the elements of A diverges. In this lecture, we shall explain the results known in this direction.
	Email ID	: balu@imsc.res.in
	Chair	: Amber Habib, SNU Delhi

Lecture 3	Speaker	: **V Uma, IIT Madras**
	Title	: K - theory of cellular varieties
	Abstract	: We shall describe the topological K-rings of some algebraic varieties which are paved by affine spaces.
	Email ID	: vuma@iitm.ac.in
	Chair	: Clare D'Cruz, CMI, Chennai

Lecture 4	Speaker	: **Amber Habib, SNU Delhi**
	Title	: 2x2 Real Matrices: a melting pot for mathematics
	Abstract	: We will review the basics of representation theory and then take up the example of SL(2,R), the group of 2x2 real matrices with determinant one. The construction and classification of the representations of SL(2,R) brings together linear algebra, analysis and geometry. It also reveals patterns and unexpected phenomena that help guide the investigation of more complicated groups. Historically, the study of SL(2,R) was the first step in understanding real reductive groups and is closely associated with the contributions of Harish-Chandra.
	Email ID	: a_habib@yahoo.com
	Chair	: N Barani Balan, CUTN

Lecture 5	Speaker	: **Jotsaroop Kaur, IISER Mohali**
	Title	: Fourier series: Classical and Modern Aspects
	Abstract	: We discuss the classical problem of convergence of Fourier series and recent advances.
	Email ID	: jotsaroop@iisermohali.ac.in
	Chair	: V Renuka Devi, CUTN

Lecture 6	Speaker	: **Anand Sawant, TIFR Mumbai**
	Title	: Central extensions of algebraic groups revisited
	Abstract	: The study of central extensions of a group, which began with the work of Schur, has a long history spanning more than a hundred years. The celebrated results of Steinberg and Matsumoto obtained about fifty years ago determine the universal central extension of certain algebraic groups. I will briefly survey these classical results and some interesting developments that have followed. If time permits, I will discuss how these results can be generalized using motivic homotopy theory (joint work with Fabien Morel).
	Email ID	: anandpsawant@gmail.com
	Chair	: Jotsaroop Kaur, IISER Mohali

Lecture 7	Speaker	: **Neena Gupta, ISI Kolkata**
	Title	: On A^2 - fibration over a PID
	Abstract	: In this talk we shall define an A^2-fibration over a ring R, discuss known results on A^2-fibrations over a PID and present our recent results on them. We shall also discuss an application of our results in solving new cases of the Abhyankar-Sathaye Epimorphism Problem. This talk is based on joint works with Parnashree Ghosh and Ananya Pal
	Email ID	: neenag@isical.ac.in
	Chair	: Anandh Sawant, TIFR Mumbai