International Conference on
Discrete Groups, Geometry and Arithmetic
A virtual event in honour of M. S. Raghunathan's 80th birthday
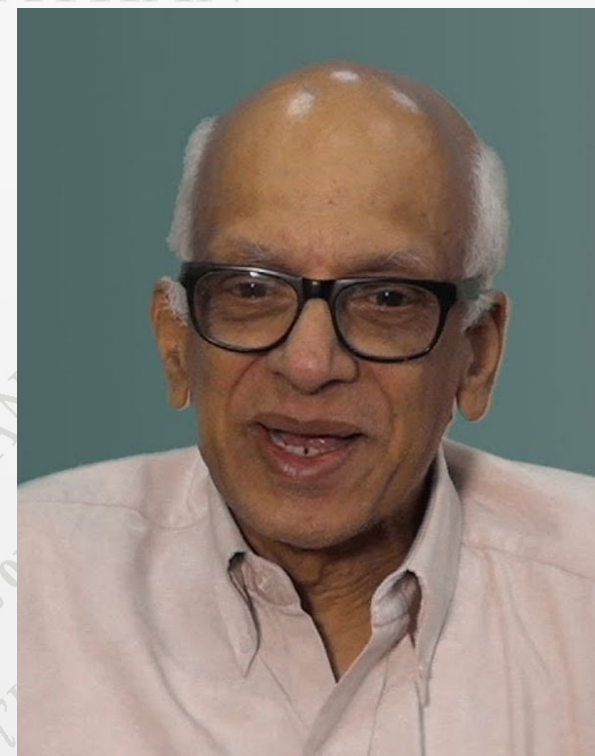
August 9 - 11, 2021

Jointly organised by

National Centre for Mathematics, India
(A joint centre of IIT Bombay and TIFR, Mumbai)

Tata Institute of Fundamental Research, Mumbai

UM-DAE Centre for Excellence in Basic Sciences, Mumbai

Discrete Groups, Geometry and Arithmetic

Study of discrete groups, especially discrete subgroups of Lie groups and more generally algebraic groups, such as the arithmetic groups, has played a very important role in our understanding of various issues in Geometry and Arithmetic, namely properties of shapes and numbers, in their fully mature abstract setting. Their group theoretic structure, their specific role as subgroups of the ambient groups, properties of their actions on a variety of spaces with topological or other kinds of structures, dynamics of actions on the homogeneous spaces associated with them, to name a few directions, have all attracted a great deal of attention, over the last century and especially in the recent decades. The results in turn have led to important breakthroughs in the broader areas of geometry, arithmetic, dynamics, and a variety allied areas. Professor Raghunathan has been one of the major players in the course of this development.

The theme of the conference will be to review the progress in the recent years, in this respect in various directions, as well as on pivotal points and issues related to them in the broader areas of geometry, Lie groups, algebraic groups, number theory and especially the Diophantine problems, dynamics on homogeneous spaces, ergodic theory etc.

Speakers:

Emmanuel Breuillard (University of Cambridge, UK)

Kai-Uwe Bux (University of Bielefeld, Germany)

V. Chernousov (University of Alberta, Edmonton, Alberta, Canada)

J.-L. Colliot-Thelene (Université Paris-Saclay, Orsay, France)

David Fisher (Indiana University, Bloomington, Indiana, USA)

T. Gelander (Weizmann Institute of Science, Rehovot, Israel)

Bill Goldman (University of Maryland, College Park, MD, USA)

Amir Mohammadi (University of California, San Diego, CA, USA)

Shahar Mozes (Hebrew University, Jerusalem, Israel)

Hee Oh (Yale University, New Haven, CT, USA)

Pedro Ontaneda (Binghamton University, New York, USA)

Raman Parimala (Emory University, Atlanta, GA, USA)

M. M. Radhika (Tata Institute of Fundamental Research, Mumbai)

Igor Rapinchuk (Michigan State University, East Lansing, MI, USA)

Nimish Shah (Ohio State University, Columbus, Ohio, USA)

Pavel Zalesski (Universidade de Brasília, Brazil)

Umberto Zannier (Scuola Normale Superiore, Pisa, Italy)

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Rahul Singh Karki (IIT Bombay, Mumbai)

Chayan Karmakar (IIT Bombay, Mumbai)

Dibyendu Mondal (IIT Bombay, Mumbai)

Arghya Pramanik (IIT Bombay, Mumbai)

Shashank Vikram Singh (IIT Bombay, Mumbai)

Prof. M.S. Raghunathan

Professor Madabusi Santanam Raghunathan was born on 11 August 1941 in Anantapur, Andhra Pradesh. After completing B.A. (Hons) from the Vivekananda College, Madras (Chennai) in 1960 he joined the Tata Institute of Fundamental Research as a Research Assistant. After an illustrious career at TIFR that culminated in the position as Professor of Eminence during 1997-2006, he served as DAE Homi Bhabha Professor at TIFR (2006-11) and as Distinguished Guest Professor at IIT Bombay (2011-17) during which he also headed the National Centre for Mathematics. He is currently affiliated to the UM-DAE Centre for Excellence in Basic Sciences as Distinguished Professor.

He has to his credit numerous publications, including many in highly reputed journals like the Annals of Mathematics, Publications of IHES, and Inventiones Mathematicae, which have been path-breaking. He is renowned for his contributions on many themes, and in particular for his work on the ``Congruence subgroup problem''. His book ``Discrete subgroups of Lie groups'' has been one of the crucial reference works in the area. One of his conjectures, the Raghunathan conjecture, has been very influential in the area of homogeneous dynamics and applications to Diophantine approximation.

His achievements were recognized through several honours, including the following: the S.S. Bhatnagar Prize (1977), Srinivasa Ramanujan Medal of INSA (1991), Mathematics Prize of TWAS - the Academy of the Developing World (1991), Election as Fellow of the Royal Society, London (2000), and the National awards of Padma Shri (2001) and Padma Bhushan (2012).

Prof. Raghunathan served on many important international committees, which include the Executive Committee of the International Mathematical Union (IMU), the Abel Prize Committee, and the Fields Medal Committee. He has played a very important role in the promotion of mathematics in India through the National Board for Higher Mathematics, which he Chaired during 1987 -- 2006, and organization of major events like the International Mathematical Olympiad (1996) and the International Congress of Mathematicians (2010) in India. He steered the institutional infrastructure of many national institutions through his stewardship of their Governing bodies. He also served on the Scientific Advisory Committee to the Cabinet (Government of India) during 2012 -- 2018.