Infosys Lecture Series

Probabilistic & Analytic Methods in Additive Number Theory

The aim of the lectures is to introduce the audience to two tools for approaching questions in additive number theory, specially adequate to study the number of presentations of an integer as the sum of elements from a given set. The first one is the "circle method", rooted in harmonic analysis, introduced by Hardy and Ramanujan in the frame of the partition function and developed by Hardy and Littlewood in the frame of the Waring problem (representation of an integer as a sum of given number of s-th powers). The second one is the probability approach introduced by Erdős and Turán and developed by Erdős and many of his collaborators; it can be used it two ways: proving number theoretic results or proving probability results which give a heuristic understanding of some number theoretic phenomena. Some connections between those two methods will also be presented.

Prof. Jean-Marc Deshouillers

Institut de Mathématiques de Bordeaux

Date : 22nd-25th Feb, 2023

Time : 3:00-4:30 p.m

Venue : Strings Lecture Hall

Harish-Chandra Research Institute, Prayagraj