

Metric Number Theory

Mumtaz Hussain (La Trobe University, Australia)

Aim of this short course is the understanding of the structure of real numbers through Diophantine approximation. We will explore answers to a simple question “how well can a real number be approximated by rational numbers”. Qualitatively the answer is trivial as the rationals are dense in reals however finding a quantitative answer leads to the metrical side of number theory. Fundamental results in Diophantine approximation such as Dirichlet’s theorem, Khintchine and Jarnik’s theorems will be discussed.