

ZAREMBA'S CONJECTURE

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Venue: Room 102, SCMS

Abstract:

Motivated by the construction of optimal sample sets for numerical integration, Zaremba (1971) proposed the following celebrated conjecture in number theory: there exists an absolute constant $M > 0$ such that every natural number q is the denominator of some reduced fraction a/q whose partial quotients are bounded by M . That is, the continued fraction expansion $a/q = 1 / (a_1 + 1 / (a_2 + 1 / (\dots + 1 / a_n)))$ satisfies $a_i \leq M$ for all $1 \leq i \leq n$. In this talk, I will survey the history of Zaremba's conjecture and outline the methods behind its recent resolution.