

Online Number Theory Seminar

19 June 2026. – 17:00-17:50

G. Walsh: An elementary method for solving $Ax^4 - By^2 = 1$.

The Diophantine equation $x^2 - 2y^4 = -1$ has been the study of numerous mathematicians over the last 90 years or so, and the determination of its integer solutions has been achieved using a variety of methods. In this lecture, we will take a look back at the history of this equation, and then describe a new method of Lijuan Lin and Ming Luo, which is entirely elementary. In particular, we will delve further into their method by assessing its applicability to other equations of the same type, and report on our discoveries - positive and negative.