

Séminaire de théorie des nombres

Le 03 novembre 2025 à 14h (PRG)

Mixed motives and the Catalan constant

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Résumé : The Catalan constant is the alternating sum of the reciprocals of the squares of odd positive integers ($1 - 1/9 + 1/25 - \dots$). In this talk, we will describe a geometric construction of a 2-dimensional mixed motive over the field of rational numbers that has the Catalan constant as a period. We will use this motive to obtain a supply of linear forms in 1 and the Catalan constant. We will also see how the coefficients of 1 and the Catalan constant in these linear forms can explicitly be calculated. The talk is based on a joint work with Kumar Murty and Yusuke Nemoto.