Séminaire de théorie des nombres

Le 29 mars 2010 à 14h

Mahler's measure and the WZ algorithm

Exposé de Mathew Rogers
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Résumé : The Mahler measure of an n-dimensional Laurent polynomial, $P(x_1, ..., x_n)$, is defined by

$$m(P) = \int_0^1 ... \int_0^1 \log |P(e^{2\pi i t_1}, ..., e^{2\pi i t_n})| dt_1...dt_n.$$

There are many conjectured relations between number-theoretic constants and Mahler measures of polynomials. In this talk, I will show how to use the Wilf-Zeilberger algorithm to (re)prove several formulas involving Mahler measures. I will also mention connections with elliptic dilogarithms. This is joint work with Jesús Guillera.