

Exposé court

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The Mahler measure of a polynomial P with integer coefficients measures the complexity of P by taking a geometric average of P on the unit torus. Perhaps surprisingly, this invariant has been shown to be related to special values of L -functions by the seminal works of Boyd, Deninger and Rodriguez-Villegas at the end of the last century. More precisely, the Mahler measure of P is usually related to the special value at the origin of the L -function associated to the hypersurface defined by P . However, sometimes one sees special values of smaller dimensional objects appearing, whose appearance has been explained in work of Maillot and Lalin by introducing the exactness property of a polynomial. In this talk, based on joint work with François Brunault, I will explain how one can push this line of thought, getting a conjecturally complete list of special values which should potentially be related to the Mahler measure of the polynomial in question. If time permits, I will explain how one may hope to find such polynomials, and prove this kind of identities, by a generalization of a method of Rogers and Zudilin.