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Matilde N Lalin* (mlalin@math.ualberta.ca), University of Alberta, Department of Mathematical and Statistical Sc, 632 CAB, Edmonton, Alberta T6G 2G1, Canada. *Higher Mahler measures.*

The classical Mahler measure of an n -variable polynomial P is the integral of $\log |P|$ over the n -dimensional unit torus \mathbb{T}^n with the Haar measure. We consider, more generally, the integral of $\log^k |P|$. Specific examples yield special values of zeta functions, Dirichlet L-series, and polylogarithms. This is a joint work with N. Kurokawa and H. Ochiai. (Received September 07, 2009)