

The Mahler measure of elliptic curves

Matilde Lalin, Université de Montréal

The Mahler measure of a multivariable polynomial P is given by the integral of $\log|P|$ where each of the variables moves on the unit circle and with respect to the Haar measure. In 1998 Boyd made a systematic numerical study of the Mahler measure of many polynomial families and found interesting conjectural relationships to special values of L-functions of elliptic curves. Recently, many of Boyd's conjectures have been proved by Burnault, Mellit, Rogers, and Zudilin. I will discuss some of those results and present new ones (in collaboration with D. Samart and W. Zudilin.)