THE MAHLER MEASURE OF EXACT POLYNOMIALS IN THREE VARIABLES

TRIEU THU HA

The Mahler measure of polynomials was introduced by Mahler in 1962. In 1980, Smyth discovered that there is a link between the Mahler measure and some objects in Number theory, namely, Dirichlet L-functions and Riemann-Zeta functions. In the talk, we will first recall some fundamental results of Mahler measures. Then we will see how the Mahler measure of certain three-variable exact polynomials can express in terms of elliptic curve L-values and Dirichlet L-values, conditionally on Beilinson's conjecture. Finally, we will apply this method to obtain (under Beilinson's conjecture) some Mahler measure identities conjectured by D. Boyd and F. Brunault.