

Evaluations of areal Mahler measure of multivariable polynomials

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Abstract: The (logarithmic) Mahler measure of a non-zero rational function P in n variables is defined as the mean of $\log |P|$ (with respect to the normalized arc length measure) restricted to the standard n -dimensional unit torus. It has been related to special values of L -functions and other arithmetic functions. Pritsker (2008) defined a natural counterpart of the Mahler measure, which is obtained by replacing the normalized arc length measure on the standard n -torus by the normalized area measure on the product of n open unit disks. In this talk, we will investigate some similarities and differences between the two versions of Mahler measure. We will also discuss some evaluations of the areal Mahler measure of multivariable polynomials, which also yields special values of L -functions. This talk includes joint work with my Siva Sankar Nair, Berend Ringeling, and Subham Roy.