



Linear Mahler Measures and Double L-values of Modular Forms

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We consider the Mahler measure of the polynomial $1+x_1+x_2+x_3+x_4$, which is the first case not yet evaluated explicitly. A conjecture due to F. Rodriguez-Villegas represents this Mahler measure as a special value at the point 4 of the L-function of a modular form of weight 3. We prove that this Mahler measure is equal to a linear combination of double L-values of certain meromorphic modular forms of weight 4.

Comments: The last section replaced with an explicit computation of a double L-value

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