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Chris J Smyth*, School of Mathematics, JCMB, King's Buildings, Mayfield Road, Edinburgh, EH9 3JZ, Scotland, and **James F McKee**. *Lehmer's problem for integer symmetric matrices.*

Let A be an integer symmetric matrix with characteristic polynomial χ_A . Defining its Mahler measure $M(A)$ to be the classical Mahler measure of the Laurent polynomial $\chi(z + 1/z)$, we prove that if $M(A) > 1$ then $M(A) \geq \lambda_0 = 1.176\dots$, the larger real root of Lehmer's polynomial $z^{10} + z^9 - z^7 - z^6 - z^5 - z^4 - z^3 + z + 1$. Further, we find all matrices A where equality occurs. (Received February 11, 2008)