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Wojciech K Kosek* (kosekw@msn.com), 14 East Cache La Poudre Street, Colorado Springs, CO 80903. *Example of a mean ergodic L^1 operator with the linear rate of growth.*

The rate of growth of an operator T satisfying the mean ergodic theorem (MET) cannot be faster than linear. It was recently shown [7] that for every $\gamma > 0$, there are positive $L^1 [0, 1]$ operators T satisfying MET, with $\lim_{n \rightarrow \infty} \frac{\|T^n\|}{n^{1-\gamma}} = \infty$. In the class of positive L^1 operators this is the most one can hope for in the sense that for every such operator T , there exists a $\gamma_0 > 0$, such that $\limsup \frac{\|T^n\|}{n^{1-\gamma_0}} = 0$. In this note we construct an example of a nonpositive L^1 operator with the highest possible rate of growth, that is $\limsup_{n \rightarrow \infty} \frac{\|T^n\|}{n} > 0$. (Received September 20, 2007)