John P. D’Angelo*, Dept. of Mathematics, Univ. of Illinois, 1409 W. Green St., Urbana, IL 61801. An easy $L^2$ estimate and volume computation.

The $2n$-dimensional volume of the image of the unit ball under a holomorphic mapping is the sum of the squared $L^2$ norms of the Jacobians of each $n$-tuple of component functions. We prove a monotonicity result for such volumes under a tensor product operation. We derive from it a sharp bound for the volume of the image of the unit ball under a proper polynomial mapping of given degree $d$. This bound is achieved by the map $z \rightarrow z^{\otimes d}$. (Received July 27, 2012)