
FERNANDO GALAZ, CIMAT, UAM–Iztapalapa

Iterating the Cesaro operator

Given a complex sequence $s = \{a_n\}$, the discrete Cesaro operator T assigns to it the sequence $Ts = \{b_n\}$, where $b_n = \frac{a_0 + \dots + a_n}{n+1}$, $n = 0, 1, \dots$. If s is a convergent sequence, we prove that $\{T^m s\}$ converges if, and only if, $a_1 = \lim_{n \rightarrow \infty} a_n$. We also establish a corresponding result for the continuous Cesaro operator defined on $C[0, 1]$.