# CORRECTION TO "SOME ERGODIC THEOREMS INVOLVING TWO OPERATORS"

## Paul CIVIN

The argument used to establish Theorem 1 of [1] proves less than asserted. Let the notation be that of [1]. Theorem 3 is then a consequence only if $\mu(S) < \infty$ and therefore Theorems 4 and 5 must be withdrawn. The revised version of Theorem 1 is as follows.

**THEOREM 1.1.** *Let t and u be nonsingular measurable transformations of S onto itself which have no wandering sets of positive measure. If for each f(x), $0 \le f(x) \le 1$, $\lim\limits_{n \to \infty} \sum\limits_{k=0}^{n} f(v^k x)/n$ exists almost everywhere $[\mu]$, then the conclusion of Theorem 1 holds.*

By Theorem 3 of [2] there exists a finite $t$-invariant measure $\alpha$ and a finite $u$-invariant measure $\beta$, each equivalent to $\mu$. The argument proceeds as before with these $\alpha$ and $\beta$. In Theorem 2, the $\alpha$ and $\beta$ are also obtained as above.

The author is indebted to Professors Y. N. Dowker and S. Tsurumi for their communications.

## REFERENCES

1. Paul Civin, *Some ergodic theorems involving two operators*, Pacific J. Math. **5** (1955), 869–876.
2. Yeal Naim Dowker, *Finite and σ-finite invariant measures*, Ann. Math. **54** (1951), 595–608.