Canad. Math. Bull.Vol. **34** (3), 1991 p. 392

ℓ^p-NORMS OF SOME GENERALIZED HAUSDORFF MATRICES: CORRECTIONS

B. E. RHOADES

The proofs of the theorems of [2] rely on the construction of a sequence satisfying certain growth conditions. Specifically, on line 7 of page 503, given an η, $0 < \eta < 1$, one is to choose $\varepsilon > 0$ so that

$$\sum_{n=N}^{\infty} a_n^p > (1-\eta)\sum_{n=0}^{\infty} a_n^p, \text{ where } a_n = \frac{\lambda_1\lambda_2\cdots\lambda_n}{(\lambda_1+\omega)\cdots(\lambda_n+\omega)}, \ \omega = \varepsilon + c/p.$$

Such a choice is possible only if $\sum_{n=0}^{\infty} a_n^p$ diverges for $\varepsilon = 0$. Unfortunately condition (5) does not force the divergence of the series. Some counterexamples are $\lambda_n = \log(n+1)$ and $\lambda_n = n^\delta$, $0 < \delta < 1$.

In order to repair the proof of Theorem 1 it is necessary to impose an additional growth condition on the λ_n. One sufficient condition is to have $\lambda_n \geq c\Big[p\Big(\exp\big(1/(n-1)p\big) - 1\Big)\Big]^{-1}$, where c is as in (5). Then, using the test of Schlomilch [1, p. 287] the series will converge for all positive ε and diverge when ε is zero.

In the statements of Theorems 1 and 2 the words *totally monotone* should be replaced by *nonnegative and nondecreasing.*

The author is indebted to Professor David Borwein for kindly pointing out the error.

REFERENCES

1. K. Knopp, *Theory and applications of infinite series*. Black & Sons, Ltd., London, 1947.
2. B. E. Rhoades, *ℓ^p-norms of some geralized Hausdorff matrices*, Canadian Math. Bull. **32**(1989), 500–504.

Department of Mathematics
Indiana University
Bloomington, Indiana 47405

Received by the editors March 6, 1990.
AMS subject classification: 47A30, 40G05.

https://doi.org/10.4153/CMB-1991-062-9 Published online by Cambridge University Press