TRANSACTIONS OF THE
AMERICAN MATHEMATICAL SOCIETY
Volume 199, 1974

ERRATUM TO "ESSENTIAL SPECTRUM FOR A HILBERT SPACE OPERATOR"

BY

RICHARD BOULDIN

We assume the notation and conventions of [2]. In its published form [2] contained the following theorem:

THEOREM 3. *If T is a closed operator which is reduced by each finite-dimensional subspace* ker $(T - z)$ *for any complex z then* (2), (3), (4), *and* (5), *from the following sets are identical. Furthermore, if T is also reduced by each finite-dimensional subspace* ker $(T^* - z)$ *then all five sets are identical*:

(1) $\sigma_{e1}(T)$,

(2) $\sigma_{e2}(T)$,

(3) $\sigma_{e3}(T)$,

(4) $\sigma_{e4}(T)$,

(5) *the points of $\sigma(T)$ which are not isolated eigenvalues of finite algebraic multiplicity.*

The correct statement is obtained by deleting "(2)" in the first sentence. The error arises from the omission of the phrase "with index zero". In Lemma 2 and Theorem 2 the phrase "Fredholm operator" should be "Fredholm operator with index zero"; otherwise, no argument is altered.

In [1] Amelin claims to give direct quotations from [2] as to the purpose of that paper and the statement of the above theorem. Neither quote is accurate, and the purpose of the paper [2] is not even loosely paraphrased. As stated in the introduction of [2] its purpose is to show that the theory of essential spectrum for a Hilbert space operator is greatly simplified by using the notion of "algebraic multiplicity" of an eigenvalue rather than "geometric multiplicity". Thus the above error did not seem to warrant the publication of a correction.

REFERENCES

1. C. F. Amelin, *On the essential spectrum*, Indiana Univ. Math. J. **23** (1973), 441–443.

2. R. Bouldin, *Essential spectrum for a Hilbert space operator*, Trans. Amer. Math. Soc. **163** (1972), 437–445.

DEPARTMENT OF MATHEMATICS, UNIVERSITY OF GEORGIA, ATHENS, GEORGIA 30602

Received by the editors January 26, 1974.