ICM 1998, Berlin, Aug. 18–27

Abstracts of Short Communications and Posters

Section:

8. Analysis

1991 MS Classification: 47

Ptak, Marek, Kraków, Poland

Toeplitz operators; dichotomy of reflexivity and transitivity

Let $\mathbf{S}$ be a linear manifold of bounded Hilbert space operators. An operator A belongs to ref $\mathbf{S}$, the *reflexive closure* of $\mathbf{S}$ if Af belongs to the closure of $\mathbf{S}f$ for each vector f in the underlying Hilbert space. Two extreme possibilities are (1) $\mathbf{S}$ is *reflexive* in the sense that ref $\mathbf{S} = \mathbf{S}$, and (2) $\mathbf{S}$ is *transitive* in the sense that ref $\mathbf{S}$ includes all bounded operators on the underlying space.

We show that every linear space $\mathcal{B}$ of Toeplitz operators which is closed in the ultraweak operator topology is either transitive or reflexive. No intermediate behavior is possible. The results cover joint work with E. A. Azoff.