A review of some works in the theory of diskcyclic operators

ABSTRACT

In this paper, we give a brief review concerning diskcyclic operators and then we provide some further characterizations of diskcyclic operators on separable Hilbert spaces. In particular, we show that if $x \in H$ has a disk orbit under T that is somewhere dense in H, then the disk orbit of x under T need not be everywhere dense in H. We also show that the inverse and the adjoint of a diskcyclic operator need not be diskcyclic. Moreover, we establish another diskcyclicity criterion and use it to find a necessary and sufficient condition for unilateral backward shifts that are diskcyclic operators. We show that a diskcyclic operator exists on a Hilbert space H over the field of complex numbers if and only if dim(H)=1 or dim(H)=Ð . Finally, we give a sufficient condition for the somewhere density disk orbit to be everywhere dense.

Keyword: Diskcyclic operators; Hypercyclic operators; Supercyclic operators; Weighted shift operators