

1077-47-1746

**Maria Neophytou\*** ([maria.neophytou@belmont.edu](mailto:maria.neophytou@belmont.edu)). *On the Point Spectrum of the Adjoints of Some Composition Operators and Weighted Composition Operators.*

Let  $H^2$  be the Hardy-Hilbert space. If  $\varphi$  is an analytic map of the unit disk into itself and  $\psi$  is analytic on the disk, the composition operator  $C_\varphi$  with symbol  $\varphi$  is defined by  $C_\varphi f = f \circ \varphi$ , and the weighted composition operator  $W_{\psi,\varphi}$  by  $W_{\psi,\varphi} f = \psi(f \circ \varphi)$ , for  $f$  in  $H^2$ . We look at adjoints of composition operators with symbols  $\varphi$  that have a fixed point inside the disk and a fixed point on the boundary with finite angular derivative there. By imposing a few extra assumptions on  $\varphi$ , we show that the point spectrum of the adjoint contains a disk centered at the origin, and that the corresponding eigenspaces are infinite-dimensional. We also identify a subspace of  $H^2$  which is invariant for the adjoint and on which the adjoint acts like a weighted shift. Finally, we generalize these results for weighted composition operators. (Received September 20, 2011)