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James M Carter* (carter42@iupui.edu). *Commutants of Composition Operators on the Hardy Hilbert Space*. Preliminary report.

For ϕ a map of the unit disk into itself, the induced composition operator C_ϕ acts on the Hilbert space of analytic functions on the disk by $C_\phi f = f \circ \phi$. The composition operator is bounded and several properties can be deduced from the properties of the symbol of ϕ .

If $\phi_t = e^{-t}z + 1 - e^{-t}$ where $t > 0$, then $\phi_t(1) = 1$ and $\phi_t'(1) < 1$ and the induced composition operators are not compact, however the operators do form a semigroup.

Given a bounded operator, A , the set of operators that commute with A is called the commutant of A and each such operator, B , satisfies the equation $AB = BA$. In the case where ϕ induces a compact composition operator, a complete characterization of the commutant is well-known.

The definition of commutant can be extended to a set of operators and this talk will discuss which operators commute with every C_{ϕ_t} for $t > 0$ as well as some of the properties of the commuting operators. (Received September 21, 2011)