COMPACT COMPOSITION OPERATORS AND DEDDENS ALGEBRAS

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We consider the Deddens algebras associated to compact composition operators on the Hardy space H^2 on the unit disk. When the compact composition operator corresponds to a function φ that satisfies $\varphi(0) = 0$ and $\varphi'(0) \neq 0$, we show that the lattice of invariant subspaces of this algebra is $\{0\} \cup \{z^n : n \in \mathbb{N}_0\}$. As a consequence, for this class of operators the associated Deddens algebra is weakly dense in the algebra of lower triangular matrices.