Composition Operators on Weighted Bergman and S^P Spaces

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Let $varphi$ be an analytic self-map of open unit disk $mathbb{D}$. The operator given by $(C_{varphi}f)(z)=f(varphi(z))$, for $z in mathbb{D}$ and f analytic on $mathbb{D}$ is called composition operator. For each $pgeq 1$, let S^p be the space of analytic functions on $mathbb{D}$ whose derivatives belong to the Hardy space H^p. For $alpha > -1$ and $p > 0$ the weighted Bergman space A^{p}_{alpha} consists of all analytic functions in $L^{p}(mathbb{D}, dA_{alpha})$, where dA_{alpha} is the normalized weighted area measure. In this presentation, we characterize boundedness and compactness of composition operators act between weighted Bergman A_{alpha}^{p} and S^q spaces, $1leq p, q<infty$. Moreover, we give a lower bound for the essential norm of composition operator from A_{alpha}^{p} into S^q spaces, $1leq pleq q$.