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59701. *Schatten p -class Weighted Composition Operators on Bergman Spaces of the Unit Ball.*

Let φ be a holomorphic self-map of the unit ball \mathbb{B}_n in \mathbb{C}^n and let ψ be holomorphic function on \mathbb{B}_n . Then a weighted composition operator induced by φ with weight ψ is given by $(W_{\psi,\varphi}f)(z) = \psi(z)f(\varphi(z))$, for z in \mathbb{B}_n and f holomorphic on \mathbb{B}_n .

A positive compact operator T on the weighted Bergman space $A_\alpha^2(\mathbb{B}_n)$ is in the trace class if

$$\text{tr}(T) = \sum_{n=1}^{\infty} \langle Te_n, e_n \rangle < \infty,$$

for some orthonormal basis $\{e_n\}$ of $A_\alpha^2(\mathbb{B}_n)$. If $0 < p < \infty$ and T is a compact operator on $A_\alpha^2(\mathbb{B}_n)$, then we say that T belongs to the Schatten p -class S_p if $(T^*T)^{p/2}$ is in the trace class.

It is known that weighted composition operators are related to Toeplitz operators on weighted Bergman spaces and Hardy space as well. We use this connection to Toeplitz operators, induced by positive measures and defined on the same space on which $W_{\psi,\varphi}$ acts, to characterize the Schatten p -class of weighted composition operators on weighted Bergman spaces. The results written in terms of the weighted φ -Berezin transform. (Received September 22, 2010)