

Products of Toeplitz operators and Sarason's conjecture on weighted Fock spaces

(joint work with E. H. Youssfi and K. Zhu)

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ABSTRACT. The setting of this talk is the weighted Fock space F_m^2 of entire functions on \mathbb{C} which are square integrable with respect to the measure $d\mu_m(z) = e^{-|z|^{2m}} dz$, $m > 0$, where dz is the normalized Lebesgue measure.

In the context of the Segal-Bargmann space ($m = 1$), Cho, Park and Zhu studied the boundedness of the product of Toeplitz operators $T_u T_{\bar{v}}$ on F_1^2 .

We extend their work to the case of general $m \geq 1$, and give necessary and sufficient conditions on u, v in F_m^2 for the product $T_u T_{\bar{v}}$ to be bounded on F_m^2 . In particular, we relate the boundedness of $T_u T_{\bar{v}}$ with the boundedness of product of the Berezin transforms of $|u|^2$ and $|v|^2$ (Sarason's conjecture).

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