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ON THE COMMUTATIVITY OF TOEPLITZ OPERATORS WITH HARMONIC SYMBOLS

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Abstract. In this paper we prove that if the polar decomposition of a symbol f is truncated above, i.e., $f(re^{i\theta}) = \sum_{k=-\infty}^{N} e^{ik\theta} f_k(r)$ where the f_k's are radial functions, and if the associated Toeplitz operator T_f commutes with $T_{z^2+\bar{z}^2}$, then $T_f = Q(T_{z^2+\bar{z}^2})$ where Q is a polynomial of degree at most 1.

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