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Efton Park* (e.park@tcu.edu), Department of Mathematics, Box 298900, Texas Christian University, Fort Worth, TX 76129. *Traces and Determinants of Toeplitz Operators.*

Let \mathcal{T} denote the C^* -algebra generated by the Toeplitz operators on the circle. It is well-known that given any two elements S and T in \mathcal{T} , their commutator $[S, T] = ST - TS$ is a compact operator. Moreover, if S and T have smooth symbols, this commutator is trace-class. If in addition S and T are invertible, the determinant of their multiplicative commutator $STS^{-1}T^{-1}$ is well-defined. In the 1970's, J. Helton and R. Howe derived simple formulas for the trace and determinant of such operators, and L. Brown showed that the Helton-Howe determinant formula has an interesting interpretation in terms of the algebraic K -theory group $K_2(C^\infty(S^1))$. In this talk I will briefly discuss these results and talk about generalizations to Toeplitz operators with matrix-valued symbols. (Received September 18, 2007)