Commutants of Toeplitz operators

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Abstract. One of the major questions in the theory of Toeplitz operators defined on the analytic Bergman space of the unit disk $\mathbb{D}$ in the complex plane $\mathbb{C}$ is a complete description of the commutant of a given Toeplitz operator, that is the set of all Toeplitz operators that commute with it. The main aim of this talk is to survey some recent developments related to this question, with special attention to quasihomogeneous Toeplitz operators. A symbol f is said to be quasihomogeneous of degree p an integer if it is of the form $f(re^{i\theta}) = e^{ip\theta}\phi(r)$, where ϕ is a radial function and (r, θ) are the polar coordinates in $\mathbb{C}$. In this case the associated Toeplitz operator T_f is also called quasihomogeneous Toeplitz operator of degree p. This operator can be seen as a particular case of the so-called Holomorphic Weighted Shifts.