

COMMUTATIVITY OF TOEPLITZ OPERATORS ON THE BERGMAN SPACES OF THE UNIT DISK

CHAO MEI LIU

Abstract. In this paper we give some necessary and sufficient conditions that Toeplitz operators with special symbols commute with Toeplitz operators with harmonic symbols on the Bergman space.

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REFERENCES

- [1] A. BROWN AND P. R. HALMOS, *Algebraic properties of Toeplitz operators*, J. Reine Angew. Math. 213 (1963), 89–102.
- [2] S. AXLER AND Ž. ČUČKOVIĆ, *Commuting Toeplitz operators with harmonic symbols*, Integral Equations Operator Theory 14 (1991), no. 1, 1–12.
- [3] K. STROETHOF, *Essentially commuting Toeplitz operators with harmonic symbols*, Canad. J. Math. 45 (1993), no. 5, 1080–1093.
- [4] S. AXLER, Ž AND N. V. RAO, *Commutants of analytic Toeplitz operators on the Bergman space*, Proc. Amer. Math. Soc. 128 (2000), no. 7, 1951–1953.
- [5] ŽELJKO ČUČKOVIĆ AND N. V. RAO, *Mellin transform, monomial symbols, and commuting Toeplitz operators*, J. Funct. Anal. 154 (1998), no. 1, 195–214.
- [6] YUFENG LU AND CHAOMEI LIU, *Commutativity and hyponormality of Toeplitz operators on the weighted Bergman space*, J. Korean Math. Soc. 46 (2009), no. 3, pp. 621–642.
- [7] ISSAM LOUHICHI, LOVA ZAKARIASY, *On Toeplitz operators with quasihomogeneous symbols*, Arch. Math., 85 (2005), no. 3, 248–257.
- [8] I. LOUHICHI AND E. STROUSE AND ELIZABETH AND L. ZAKARIASY, *Products of Toeplitz operators on the Bergman space*, Integral Equations Operator Theory 54 (2006), no. 4, 525–539.