

SELF-COMMUTATOR NORM OF HYPONORMAL TOEPLITZ OPERATORS

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Abstract. Chu and Khavinson recently obtained a lower bound for the norm of the self-commutator of a certain class of hyponormal Toeplitz operators on the Hardy space. Via a different approach, we offer a generalization of their result.

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REFERENCES

- [1] S. R. BELL, T. FERGUSON, AND E. LUNDBERG, *Self-commutators of Toeplitz operators and isoperimetric inequalities*, Math. Proc. R. Ir. Acad. **114A** (2014), no. 2, 115–133. MR 3353499
- [2] C. BÉNÉTEAU AND D. KHAVINSON, *The isoperimetric inequality via approximation theory and free boundary problems*, Comput. Methods Funct. Theory **6** (2006), no. 2, 253–274. MR 2291136
- [3] A. BROWN AND P. R. HALMOS, *Algebraic properties of Toeplitz operators*, J. Reine Angew. Math. **213** (1963/1964), 89–102. MR 0160136 (28 #3350)
- [4] C. CHU AND D. KHAVINSON, *A note on the spectral area of Toeplitz operators*, Proc. Amer. Math. Soc. **144** (2016), no. 6, 2533–2537. MR 3477069
- [5] C. C. COWEN, *Hyponormality of Toeplitz operators*, Proc. Amer. Math. Soc. **103** (1988), no. 3, 809–812. MR 947663
- [6] M. FLEEMAN AND D. KHAVINSON, *Extremal domains for self-commutators in the Bergman space*, Complex Anal. Oper. Theory **9** (2015), no. 1, 99–111. MR 3300527
- [7] D. KHAVINSON, *A note on Toeplitz operators*, Banach spaces (Columbia, Mo., 1984), Lecture Notes in Math., vol. 1166, Springer, Berlin, 1985, pp. 89–94. MR 827763
- [8] J. OLSEN AND M. C. REGUERA, *On a sharp estimate for Hankel operators and Putnam's inequality*, Rev. Mat. Iberoam. **32** (2016), no. 2, 495–510. MR 3512424
- [9] C. R. PUTNAM, *An inequality for the area of hyponormal spectra*, Math. Z. **116** (1970), 323–330. MR 0270193