COMMUTATIVITY AND SPECTRAL PROPERTIES OF kth –ORDER SLANT LITTLE HANKEL OPERATORS ON THE BERGMAN SPACE

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Abstract. In this paper, we introduce the notion of kth-order slant little Hankel operator on the Bergman space with essentially bounded harmonic symbols on the unit disc and obtain its algebraic and spectral properties. We have also discussed the conditions under which k^{th}-order slant little Hankel operators commute.

REFERENCES

[1] P. AIENA, *Fredholm and local spectral theory, with applications to multipliers*, Kluwer Academic Publishers, Dordrecht, 2004.

[2] S. C. ARORA, R. BATRA AND M. P. SINGH, *Slant Hankel operators*, Arch. Math. (Brno) **42**, 2 (2006), 125–133.

[3] S. C. ARORA AND J. BHOLA, *The compression of a k th-order slant Hankel operator*, Ganita **59**, 1 (2008), 1–11.

[4] S. C. ARORA AND J. BHOLA, *Weyl's theorem for a class of operators*, Int. J. Contemp. Math. Sci. **6**, 25 (2011), 1213–1220.

[5] R. G. DOUGLAS, *Banach algebra techniques in operator theory*, Academic Press **49**, New York-London, 1972.

[6] P. DUREN AND A. SCHUSTER, *Bergman spaces, Mathematical Surveys and Monographs*, American Mathematical Society **100**, 2004.

[7] P. R. HALMOS, *A Hilbert space problem book*, D. Van Nostrand Co., Inc., Princeton, N. J.-Toronto, Ont.-London, 1967.

[8] M. C. HO, *Properties of slant Toeplitz operators*, Indiana Univ. Math. J. **45**, 3 (1996), 843–862.

[9] Y. LU, C. LIU AND J. YANG, *Commutativity of k th-order slant Toeplitz operators*, Math. Nachr. **283**, 9 (2010), 1304–1313.

[10] V. V. PELLER, *An excursion into the theory of Hankel operators*, Math. Sci. Res. Inst. Publ., Holomorphic spaces (Berkeley, CA, 1995) **33**, Cambridge Univ. Press, Cambridge, 65–120, 1998.

[11] V. V. PELLER, *Hankel operators and their applications*, Springer Monographs in Mathematics, Springer-Verlag, New York, 2003.

[12] S. C. POWER, *Hankel operators on Hilbert space*, Bull. London Math. Soc. **12**, 6 (1980), 422–442.