

FIXED POINTS OF A CLASS OF UNITARY OPERATORS

NAMITA DAS* and JITENDRA KUMAR BEHERA

Communicated by E. Ko

ABSTRACT. In this paper, we consider a class of unitary operators defined on the Bergman space of the right half plane and characterize the fixed points of these unitary operators. We also discuss certain intertwining properties of these operators. Applications of these results are also obtained.

REFERENCES

1. C. A. Berger, L. A. Coburn, and K. H. Zhu, *Function theory on certain domains and the Berezin-Toeplitz symbol calculus*, Amer. J. Math. **110** (1988), no. 5, 921–953.
2. N. Das, *The Berezin transform of bounded linear operators*, J. Indian Math. Soc. **76** (2009), no. 1, 47–60.
3. S. Elliott and A. Wynn, *Composition operators on weighted Bergman spaces of a half plane*, Proc. Edinburgh Math. Soc. **54** (2011), no. 2, 373–380.
4. S. Grudsky, A. Karapetyants, and N. Vasilevski, *Dynamics of properties of Toeplitz operators on the upper half-plane: parabolic case*, J. Operator Theory **52** (2004), no. 1, 185–214.
5. P. R. Halmos, *A Hilbert space problem book*, Second edition. Graduate Texts in Mathematics, 19. Encyclopedia of Mathematics and its Applications, 17. Springer-Verlag, New York-Berlin, 1982.
6. S. Helgason, *Groups and geometric analysis. Integral geometry, invariant differential operators, and spherical functions*, Corrected reprint of the 1984 original. Mathematical Surveys and Monographs, 83. American Mathematical Society, Providence, RI, 2000.
7. S. H. Kang, *Berezin transforms and Toeplitz operators on the weighted Bergman space of the half plane*, Bull. Korean Math. Soc. **44** (2007), no. 2, 281–290.

Copyright 2018 by the Tusi Mathematical Research Group.

Date: Received: Oct. 13, 2017; Accepted: Feb. 4, 2018.

*Corresponding author.

2010 *Mathematics Subject Classification*. Primary 47B38; Secondary 47B32.

Key words and phrases. Right half plane, Bergman space, unitary operator, automorphism, fixed point.

8. A. Korányi, *Function theory on bounded symmetric domains, several complex variables*, (Cortona, 1976/1977), pp. 205–216, Scuola Norm. Sup. Pisa, Pisa, 1978.
9. M. S. Moslehian and S. M. S. Nabavi Sales, *Some conditions implying normality of operators*, C. R. Math. Acad. Sci. Paris **349** (2011), no. 5-6, 251–254.
10. K. H. Zhu, *Operator theory in function spaces*, Monographs and textbooks in Pure and Applied Mathematics **139**, Marcel Dekker, Inc., New York, 1990.

P. G. DEPARTMENT OF MATHEMATICS, UTKAL UNIVERSITY, VANI VIHAR, BHUBANESWAR-751004, ODISHA, INDIA.

E-mail address: namitadas440@yahoo.co.in

E-mail address: jitendramath0507@gmail.com