

COMPLEX SYMMETRIC WEIGHTED COMPOSITION LAMBERT TYPE OPERATORS ON $L^2(\Sigma)$

M. R. JABBARZADEH AND M. MORADI

Abstract. In this paper we obtain the polar decomposition and the Aluthge transform of a weighted composition Lambert type operator $M_wEM_uC_\varphi$ on $L^2(\Sigma)$. In addition, we study the complex symmetry of these types of operators induced by triple $(w; u, \varphi)$.

Mathematics subject classification (2010): Primary 47B20, Secondary 47B38.

Keywords and phrases: Lambert Type operator, conditional expectation operator, composition, polar decomposition, complex symmetry.

REFERENCES

- [1] P. S. BOURDON AND S. WALED NOOR, *Complex symmetry of invertible composition operators*, J. Math. Anal. Appl. **429** (2015), 105–110.
- [2] J. T. CAMPBELL AND W. E. HORNOR, *Localising and seminormal composition operators on L^2* , Proc. Roy. Soc. Edinburgh Sect. A **124** (1994), 301–316.
- [3] Y. ESTAREMI AND M. R. JABBARZADEH, *Weighted composition Lambert type operators on L^p spaces*, *Mediterr. J. Math.* **11** (2014), 955–964.
- [4] Y. ESTAREMI AND M. R. JABBARZADEH, *Weighted lambert type operators on L^p -spaces*, *Oper. Matrices* **7** (2013), 101–116.
- [5] S. R. GARCIA, E. PRODAN AND M. PUTINAR, *Mathematical and physical aspects of complex symmetric operators*, J. Phys. A **47** (2014), 353001, 54 pp.
- [6] S. R. GARCIA AND M. PUTINAR, *Complex symmetric operators and applications I*, Trans. Amer. Math. Soc. **358** (2006), 1285–1315.
- [7] S. R. GARCIA AND M. PUTINAR, *Complex symmetric operators and applications II*, Trans. Amer. Math. Soc. **359** (2007), 3913–3931.
- [8] S. R. GARCIA AND W. WOGEN, *Some new classes of complex symmetric operators*, Trans. Amer. Math. Soc. **362** (2010), 6065–6077.
- [9] J. J. GROBLER AND B. DE PAGTER, *Operators representable as multiplication conditional expectation operators*, J. Oper. Theory **48** (2002), 15–40.
- [10] P. V. HAI AND L. H. KHOI, *Complex symmetry of weighted composition operators on the Fock space*, J. Math. Anal. Appl. **433** (2016), 1757–1771.
- [11] J. D. HERRON, *Weighted conditional expectation operators*, Oper. Matrices **1** (2011), 107–118.
- [12] T. HOOVER, A. LAMBERT AND J. QUINN, *The Markov process determined by a weighted composition operator*, Studia Math. **LXXII** (1982), 225–235.
- [13] M. R. JABBARZADEH AND Y. ESTAREMI, *Essential norm of substitution operators on L^p spaces*, Indian J. Pure Appl. Math. **43** (2012), 263–278.
- [14] M. R. JABBARZADEH, *Conditional multipliers and essential norm of uC_φ between L^p spaces*, Banach J. Math. Anal. **4** (2010), 158–168.
- [15] A. LAMBERT, *L^p multipliers and nested sigma-algebras*, Oper. Theory Adv. Appl. **104** (1998), 147–153.
- [16] M. M. RAO, *Conditional measure and applications*, Marcel Dekker, New York, (1993).
- [17] M. WANG AND X. YAO, *Complex symmetry of weighted composition operators in several variables*, Internat. J. Math. **27** (2016) 1650017, 14 pp.