

WEIGHTED COMPOSITION OPERATORS ON THE FOCK SPACE

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Abstract. In this paper, we study weighted composition operators on the Fock space. We show that a weighted composition operator is cohyponormal if and only if it is normal. Moreover, we give a complete characterization of closed range weighted composition operators. Finally, we find norms of some weighted composition operators.

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REFERENCES

- [1] J. R. AKEROYD AND S. R. FULMER, *Closed-range composition operators on weighted Bergman spaces*, Integr. Equ. Oper. Theory **72** (2012), 103–114.
- [2] P. S. BOURDON, *Spectra of some composition operators and associated weighted composition operators*, J. Oper. Theory **67** (2) (2012), 537–560.
- [3] P. S. BOURDON AND S. K. NARAYAN, *Normal weighted composition operators on the Hardy space $H^2(\mathbb{D})$* , J. Math. Anal. Appl. **367** (2010), 278–286.
- [4] B. J. CARSWELL, B. D. MACCLUER AND A. SCHUSTER, *Composition operators on the Fock space*, Acta Sci. Math. (Szeged) **69** (2003), 871–887.
- [5] J. B. CONWAY, *A Course in Functional Analysis, Second Edition*, Springer-Verlag, New York, 1990.
- [6] C. C. COWEN, S. JUNG, AND E. KO, *Normal and cohyponormal weighted composition operators on H^2* , Operator Theory: Advances and Applications **240** (2014), 69–85.
- [7] C. C. COWEN AND B. D. MACCLUER, *Composition Operators on Spaces of Analytic Functions, Studies in Advanced Mathematics*, CRC Press, Boca Raton, FL, 1995.
- [8] M. FATEHI AND M. HAJI SHAABANI, *Norms of hyponormal weighted composition operators on the Hardy and weighted Bergman spaces*, Operators and Matrices **12**(4) (2018), 997–1007.
- [9] P. GHATAGE AND M. TJANI, *Closed range composition operators on Hilbert function spaces*, J. Math. Anal. Appl. **431** (2) (2015), 841–866.
- [10] T. LE, *Normal and isometric weighted composition operators on the Fock space*, Bull. London Math. Soc. **46** (2014), 847–856.
- [11] J. H. SHAPIRO, *Composition Operators and Classical Function Theory*, Springer-Verlag, New York, 1993.
- [12] S. UEKI, *Weighted composition operator on the Fock space*, Proc. Amer. Math. Soc. **135** (2007), 1405–1410.
- [13] L. ZHAO, *Unitary weighted composition operators on the Fock space of \mathbb{C}^n* , Complex Anal. Oper. Theory **8** (2014), 581–590.
- [14] L. ZHAO, *Invertible weighted composition operators on the Fock space of \mathbb{C}^n* , J. Funct Spaces **2015**. Art. ID 250358.
- [15] L. ZHAO AND C. PANG, *A class of weighted composition operators on the Fock space*, Journal of Mathematical Research with Applications, **35** (3) (2015), 303–310.
- [16] K. ZHU, *Analysis on Fock Spaces, Graduate Texts in Mathematics 263*, Springer, New York, 2012.
- [17] N. ZORBOSKA, *Composition operators with closed range*, Trans. Amer. Math. Soc. **344** (1994), 791–801.