

NORM OF COMPOSITION OPERATOR ON MIXED NORM SPACES

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Abstract. Computation of the exact norm of the composition operator acting on the spaces of holomorphic functions has shown to be difficult to perform. In this paper, we provide estimates of the norm of this operator acting on the mixed norm space $H^{p,q,\alpha}$. For some values of parameters p, q and α , the proposed upper bound of the norm generalizes the upper bound of the norm of the composition operator acting on the weighted Bergman space.

Mathematics subject classification (2020): 30H20, 46E30, 47A30.

Keywords and phrases: Composition operator, norm, mixed norm space.

REFERENCES

- [1] I. ARÉVALO, *A characterization of the inclusions between mixed norm spaces*, J. Math. Anal. Appl. **429**, 2 (2015), 942–955.
- [2] I. ARÉVALO, M. D. CONTRERAS, L. RODRIGUES-PIAZZA, *Semigroups of composition operators and integral operators on mixed norm spaces*, Rev. Mat. Complut. **32**, (2019), 767–798.
- [3] C. COWEN, *Linear fractional composition operators on H^2* , Integral Equations Operator Theory **11**, (1988), 151–160.
- [4] C. COWEN, B. MACCLUER, *Composition Operators on Spaces of Analytic Functions*, CRC Press, Boca Raton, FL, USA, 1995.
- [5] T. M. FLETT, *Lipschitz spaces of functions on the circle and the disk*, J. Math. Anal. Appl. **39**, 1 (1972), 125–158.
- [6] T. M. FLETT, *The dual of an inequality of Hardy and Littlewood and some related inequalities*, J. Math. Anal. Appl. **38**, 3 (1972), 746–765.
- [7] M. JEVTIĆ, D. VUKOTIĆ, M. ARSENOVIĆ, *Taylor Coefficients and Coefficient Multipliers of Hardy and Bergman-type Spaces*, Springer, Cham, Switzerland, 2016.
- [8] A. LLINARES, D. VUKOTIĆ, *Contractive inequalities for mixed norm spaces and the Beta function*, J. Math. Anal. Appl. **509**, 1 (2022).
- [9] C. LIU, *Sharp Forelli-Rudin estimates and the norm of the Bergman projection*, J. Funct. Anal. **268**, 2 (2015), 255–277.
- [10] E. A. NORDGREN, *Composition operators*, Canadian J. Math. **20**, (1968), 442–449.
- [11] A. SISKAKIS, *Semigroups of composition operators in Bergman spaces*, Bull. Austral. Math. Soc. **35**, 3 (1987), 397–406.
- [12] H. QUEFFÉLEC, *Norms of composition operators with affine symbols*, J. Anal. **20**, (2012), 47–58.
- [13] K. ZHU, *Operator Theory in Function Spaces*, second edition, American Mathematical Society, Providence, RI, USA, 2007.