DIFFERENCES OF WEIGHTED COMPOSITION OPERATORS BETWEEN WEIGHTED BERGMAN SPACES AND WEIGHTED BANACH SPACES OF HOLOMORPHIC FUNCTIONS

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Abstract. We give a characterization for the essential norm of differences of weighted composition operators acting between weighted Bergman spaces and weighted Banach spaces of analytic functions with sup-norms.

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Key words. Differences of weighted composition operators, weighted Banach spaces of holomorphic functions, weighted Bergman spaces, essential norm.

REFERENCES

[1] Bierstedt, K.D. and Summers, W.H., *Biduals of weighted Banach spaces of analytic functions*, J. Aust. Math. Soc. (Series A), **54** (1993), 70–79.

[2] Bierstedt, K.D., Bonet, J. and Taskinen, J., *Associated weights and spaces of holomorphic functions*, Studia Math., **127** (1998), 137–168.

[3] Cowen, C. and MacCluer, B., *Composition Operators on Spaces of Analytic Functions*, CRC Press, Boca Raton, 1995.

[4] Domański, P. and Lindström, M., *Sets of interpolation and sampling for weighted Banach spaces of holomorphic functions*, Ann. Polon. Math, **79** (2002), 233–264.

[5] Duren, P. and Schuster, A., *Bergman spaces*, Mathematical Surveys and Monographs, Amer. Math. Soc., Providence RI, 2004.

[6] Harutyunyan, A. and Lusky, W., *On the boundedness of the differentiation operator between weighted spaces of holomorphic functions*, Studia Math., **184** (2008), 233–247.

[7] Hedenmalm, H., Korenblum, B. and Zhu, K., *Theory of Bergman spaces*, Graduate Texts in Mathematics, **199**, Springer, New York.

[8] Hosokawa, T., Izuchi, K. and Zheng, D., *Isolated points and essential components of composition operators on H^∞*, Proc. Amer. Math. Soc., **130** (2002), 1765–1773.

[9] Lindström, M. and Wolf, E., *Essential norm of the difference of weighted composition operators*, Monatsh. Math., **153** (2008), 133–143.

[10] Lusky, W., *On the structure of $Hv_0(D)$ and $hv_0(D)$*, Math. Nachr., **159** (1992), 279–289.

[11] Lusky, W., *On weighted spaces of harmonic and holomorphic functions*, J. Lond. Math. Soc., **51** (1995), 309–320.

[12] Nieminen, P., *Compact differences of composition operators on Bloch and Lipschitz spaces*, Comput. Methods Funct. Theory, **7** (2007), 325–344.

[13] Shapiro, J.H., *Composition Operators and Classical Function Theory*, Springer, 1993.

[14] Shields, A.L. and Williams, D.L., *Bounded projections, duality, and multipliers in spaces of harmonic functions*, J. Reine Angew. Math., **299/300** (1978), 256–279.

[15] Shields, A.L. and Williams, D.L., *Bounded projections and the growth of harmonic conjugates in the disc*, Michigan Math. J., **29** (1982), 3–25.

[16] WOLF, E., *Weighted composition operators between weighted Bergman spaces and weighted Banach spaces of holomorphic functions*, Rev. Mat. Complut., **21** (2008), 475–480.

[17] WOLF, E., *Weighted composition operators between weighted Bergman spaces*, RAC-SAM, Rev. R. Acad. Cien. Serie A. Math., **103** (2009), 11–15.

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