Composition Operators between μ-Bloch Spaces

JULIO C. RAMOS-FERNÁNDEZ *

Departamento de Matemáticas, Universidad de Oriente,
6101 Cumaná, Edo. Sucre, Venezuela,
jcramos@udo.edu.ve

Abstract: In this paper we study continuity, boundedness from below and compactness of composition operators between μ-Bloch spaces for very general weights μ.

Key words: Bloch space, composition operators.

AMS *Subject Class.* (2010): 30D45, 47B33.

REFERENCES

[1] J.M. ANDERSON, J. CLAUNIE, CH. POMMERENKE, On Bloch functions and normal functions, *J. Reine Angew Math.* **270** (1974), 12 – 37.

[2] K.R.M. ATTELE, Toeplitz and Hankel operators on Bergman one space, *Hokkaido Math. J.* **21** (2) (1992), 279 – 293.

[3] K.D. BIERSTEDT, J. BONET, J. TASKINEN, Associated weights and spaces of holomorphic functions. *Studia. Math.* **127** (2) (1998), 137 – 168.

[4] K.D. BIERSTEDT, W.H. SUMMERS, Biduals of weighted Banach spaces of analytic functions. *J. Austral Math. Soc. (Serie A)* **54** (1) (1993), 70 – 79.

[5] J. BONET, P. DOMAŃKI, M. LINDSTRÖM, J. TASKINEN, Composition operators between weighted Banach spaces of analytic functions. *J. Austral Math. Soc. (Serie A)* **64** (1) (1998), 101 – 118.

[6] H. CHEN, P. GAUTHIER, Boundedness from below of composition operators on α-Bloch spaces, *Canad. Math. Bull.* **51** (2) (2008), 195 – 204.

[7] H. CHEN, P. GAUTHIER, Composition operators on μ-Bloch spaces, *Canad. J. Math.* **61** (1) (2009), 50 – 75.

[8] R. CHEN, S. STEVIĆ, Z. ZHOU, Weighted composition operators between Bloch type spaces in the polydisc, *Mat. Sb.* **201** (2) (2010), 131 – 160.

[9] M.D. CONTRERAS, A.G. HERNÁNDEZ-DÍAZ, Weighted composition operators in weighted Banach spaces of analytic functions. *J. Austral Math. Soc. (Serie A)* **69** (1) (2000), 41 – 60.

[10] P. Ghatage, D. Zheng, N. Zorboska, Sampling sets and closed range composition operators on the Bloch space, *Proc. Amer. Math. Soc.* **133** (2005), 1371 – 1377.

[11] J. Giménez, R. Malavé, J.C. Ramos-Fernández, Composition operators on μ-Bloch type spaces, *Rend. Circ. Mat. Palermo (2)* **59** (1) (2010), 107 – 119.

[12] H. Hedenmalm, B. Korenblum, K. Zhu, "Theory of Bergman Spaces", Graduate Texts in Mathematics, 199, Springer Verlag, New York, 2000.

[13] B. McCluer, R. Zhao, Essential norms of weighted composition operators between Bloch-type spaces, *Rocky Mountain J. Math.* **33** (4) (2003), 1437 – 1458.

[14] K. Madigan, A. Matheson, Compact composition operators on the Bloch space, *Trans. Amer. Math. Soc.* **347** (7) (1995), 2679 – 2687.

[15] A. Montes-Rodríguez, The essential norm of a composition operator on Bloch spaces, *Pacific J. Math.* **188** (2) (1999), 339 – 351.

[16] A. Montes-Rodríguez, Weighted composition operators on weighted Banach spaces of analytic functions, *J. London Math. Soc. (2)* **61** (3) (2000), 872 – 884.

[17] J.C. Ramos-Fernández, Composition operators on Bloch-Orlicz type spaces, *Appl. Math. Comput.* **217** (7) (2010), 3392 – 3402.

[18] S. Stević, On new Bloch-type spaces, *Appl. Math. Comput.* **215** (2) (2009), 841 – 849.

[19] M. Tjani, "Compact Composition Operators on some Möbius Invariant Banach Space", Ph. D. dissertation, Michigan State University, 1996.

[20] E. Wolf, Compact differences of composition operators. *Bull Austral. Math. Soc.* **77** (1) (2008), 161 – 165.

[21] E. Wolf, Weighted composition operators between weighted Bloch type spaces, *Bull. Soc. Roy. Sci. Liège* **80** (2011), 806 – 816.

[22] J. Xiao, Compact composition operators associated with Bloch-type spaces, *Complex Variables Theory Appl.* **46** (2001), 109 – 121.

[23] K. Yang, Z. Zhou, Essential norm of the difference of composition operators on Bloch space, *Czechoslovak Math. J.* **60(135)** (4) (2010), 1139 – 1152.

[24] R. Yoneda, The composition operators on weighted Bloch space, *Arch. Math. (Basel)* **78** (4) (2002), 310 – 317.

[25] X. Zhang, J. Xiao, Weighted composition operators between μ-Bloch spaces on the unit ball, *Sci. China Ser. A* **48** (10) (2005), 1349 – 1368.

[26] K. Zhu, Bloch type spaces of analytic functions, *Rocky Mountain J. Math.* **23** (1993), 1143 – 1177.