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ON NORMAL FUNCTIONS IN SEVERAL COMPLEX VARIABLES

TING ZHU, SHENGYAO ZHOU AND LIU YANG

Abstract. In this paper, we generalize the conception of φ-normal to holomorphic functions of several complex variables. Extensions of some classical criteria for normality of holomorphic functions of several complex variables are also given.

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REFERENCES

[1] R. AULASKARI AND J. RÄTTYÄ, *Properties of meromorphic φ-normal functions*, Michigan Math. J., **60**, (2011), 93–111.
[2] P. V. DOVBUSH, *Applications of Zalcman's lemma in $\mathbb{C}^n$*, arXiv:1907.00925.
[3] P. V. DOVBUSH, *Normal functions of many complex variables*, Mosc Univ Math Bull., **36**, (1981), 44–48.
[4] P. V. DOVBUSH, *Zalcman's lemma in $\mathbb{C}^n$*, Complex Var. Elliptic Equ., **65**, (2020), 796–800.
[5] P. LAPPAN, *The spherical derivative and normal functions*, Ann. Acad. Sci. Fenn. Ser. A IMath., **3**, (1977), 301–310.
[6] P. LAPPAN, *A criterion for a meromorphic function to be normal*, Comment. Math. Helv., **49**, (1974), 492–495.
[7] O. LEHTO AND K. VIRTANEN, *Boundary behaviour and normal meromorphic functions*, Acta Math., **97**, (1957), 47–56.
[8] J. SCHIFF, *Normal Families*, Springer, Berlin, 1993.
[9] J. H. SHI, *Fundamentals of Several Complex Variables Theory*, Higher Education Press, Beijing, 1996.
[10] S. G. KRANTZ, *Function Theory of Several Complex Variables*, Ams Chelsea Publishing, Providence, Rhode Island, 1992.
[11] T. NISHINO, *Function Theory in Several Complex Variables*, University of Tokyo Press, Tokyo, Japan, 1996.
[12] T. V. TAN AND N. V. THIN, *On Lappan's five-point theorem*, Comput. Methods Funct. Theory., **17**, (2017), 47–63.
[13] Y. XU, *On the five-point theorems due to Lappan*, Ann. Pol. Math., **101**, (2011), 227–235.
[14] Y. XU AND H. L. QIU, *Two results on φ-normal functions*, C. R. Math. Acad. Sci. Paris., **352**, (2014), 21–25.
[15] Y. XU AND H. L. QIU, *Normal functions and shared sets*, Filomat, **30**, (2016), 287–292.
[16] L. YANG, *Value Distribution Theory*, Springer-Verlag & Science Press, Berlin, 1993.

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