

GENERALIZATIONS OF PICARD'S THEOREM WITH MOVING HYPERSURFACES

FEI LI AND LIU YANG*

Abstract. We generalize the classical Big Picard Theorem to holomorphic mappings of several complex variables into the complement of moving hypersurfaces in general position (NOT just point-wise general position) in $\mathbf{P}^n(\mathbb{C})$.

Mathematics subject classification (2020): 32H25, 32A19, 32Q45, 32H02.

Keywords and phrases: Picard Theorem, holomorphic mappings, normal mappings, Kobayashi hyperbolicity.

REFERENCES

- [1] G. ALADRO AND S. G. KRANTZ, *A criterion for normality in \mathbb{C}^n* , J. Math. Anal. and App., 161 (1991), 1–8.
- [2] A. EREMENKO, *A Picard type theorem for holomorphic curves*, Period. Math. Hung., 38 (1999), 39–42.
- [3] M. L. FANG AND W. HONG, *Some results on normal family of meromorphic functions*, Bull. Malays. Math. Sci. Soc., (2) 23 (2000), 143–151.
- [4] H. FUJIMOTO, *Extension of the big Picard's theorem*, Tohoku Math. J., 24 (1972), 415–422.
- [5] H. FUJIMOTO, *On holomorphic maps into a taut complex space*, Nagoya Math. J., 46 (1972), 49–61.
- [6] H. FUJIMOTO, *On families of meromorphic maps into the complex projective space*, Nagoya Math. J., 54 (1974), 21–51.
- [7] M. GREEN, *Holomorphic maps into complex projective space omitting hyperplanes*, Trans Amer Math Soc., 169 (1972), 89–103.
- [8] N. T. T. HANG AND T. V. TAN, *Big Picard theorems for holomorphic mappings into the complement of $2n + 1$ moving hypersurfaces in $\mathbf{P}^n(\mathbb{C})$* , An. St. Univ. Ovidius Constanta., 18 (2010), 155–162.
- [9] J. JOSEPH AND M. H. KWACK, *Extention and convergence theorems for families of normal maps in several complex variables*, Proc. Amer. Math. Soc., 125 (1997), 1675–1684.
- [10] P. KIERNAN, *Extensions of holomorphic maps*, Trans. Amer. Math. Soc., 172 (1972), 345–355.
- [11] S. KOBAYASHI, *Hyperbolics complex paces*, Springer-Verlag, New York, 1998.
- [12] P. MONTEL, *Sur les suites infinies des fonctions*, Ann. Ecole Norm., Sup. 24 (1907), 233–334.
- [13] J. NOGUCHI AND J. WINKELMANN, *Holomorphic curves and integral points of divisors*, Math. Z., 239 (2002), 593–610.
- [14] S. D. QUANG, *Extension of holomorphic mappings for several moving hypersurfaces*, Ukrainian Math. J., 64 (2012), 441–455.
- [15] L. YANG, *Value distribution theory*, Springer-Verlag, Berlin, 1993.
- [16] L. YANG, C. Y. FANG, AND X. C. PANG, *Normal families of holomorphic mappings into complex projective space concerning shared hyperplanes*, Pacific Journal of Math., 272 (2014), 245–256.