General Mathematics Vol. 19, No. 1 (2011), 27–43

Meromorphic functions concerning their differential polynomials sharing the fixed-points with finite weight [1]

Hong-Yan Xu, Ting-Bin Cao and Tang-Sen Zhan

Abstract

This paper deals with some uniqueness problems of meromorphic functions concerning their differential polynomials sharing the fixed-points or a small function with finite weight. These results in this paper greatly improve the recent results given by X.-Y. Zhang& J.-F. Chen and W.C. Lin[X.-Y. Zhang, J.-F. Chen, W.C. Lin , Entire or meromorphic functions sharing one value, Comput. Math. Appl. 56(2008), 1876-1883.].

2000 Mathematics Subject Classification: 30D30, 30D35.
Key words and phrases: Meromorphic function; Weighted sharing; Uniqueness.

References

[1] A.Banerjee, *Weighted sharing of a small function by a meromorphic function and its derivative*, Comput. Math. Appl. 53(2007), 1750-1761.

[2] A.Banerjee, *On uniqueness of meromorphic functions when two differentail monomials share one value*, Bull. Korean Math. Soc. 44(4) (2007): 607-622

[3] C.-Y.Fang, M.-L.Fang, *Uniqueness of meromorphic functions and differential polynomials*, Comput. Math. Appl. 44(2002) 607-617.

[1] *Received 24 March, 2009*
Accepted for publication (in revised form) 14 April, 2009

[4] M.-L.Fang, *Uniqueness and value-sharing of entire functions*, Comput. Math. Appl. 44(2002), 823-831.

[5] M.-L.Fang, X.-H.Hua, *Entire functions that share one value*, J.Nanjing Unvi. Math. Biquarterly 13(1996):44-48.

[6] W.K.Hayman, *Meromorphic Functions*, The Clarendon Press, Oxford,1964.

[7] I.Lahiri, *Weighted sharing and uniqueness of meromorphic functions*, Nagoya Math.J. 161 (2001), 193-206.

[8] I.Lahiri, *Weighted value sharing and uniqueness of meromorphic functions*, Complex Variables Theory Appl. 46 (2001), No. 3, 241-253.

[9] I.Lahiri, S.Dewan, *Value distribution of the product of a meromorphic function and its derivative*, Kodai Math.J., 26(2003)(1): 95-100.

[10] W.-C.Lin, H.-X.Yi, *Uniqueness theorems for meromorphic function*, Indian J. Pure Appl. Math. 35(2004)(2),121-132.

[11] W.-C.Lin, H.-X.Yi, *Uniqueness theorems for meormorphic functions concerning fixed-points*, Complex Variables Theory Appl. 49(2004),No.11, 793-806.

[12] H.-Y.Xu, C.-F.Yi, T.-B.Cao, *Uniqueness of meromorphic functions and differential polynomials sharing one value with finite weight*, Ann.Polon.Math., 95 (2009), 51-66.

[13] C.-C.Yang, X.-H.Hua, *Uniqueness and value-sharing of meromorphic functions*, Ann. Acad. Sci. Fenn. Math. 22(1997), No.2, 395-406.

[14] H.-X.Yi, *Meromorphic functions that share one or two values II*, Kodai Math. J. 22(1999), No.2, 264-272.

[15] H.-X.Yi, *Some further results on uniqueness of meromorphic functions*, Complex Variables Theory Appl. 38 (4),(1999): 375-385.

[16] H.-X.Yi, C.-C.Yang,*Uniqueness theory of meromorphic functions*, Science Press, Beijing,(1995).

[17] L.Yang, *Value distribution theory*.Springer-Verlag.Berlin(1993).

[18] X.-Y.Zhang, J.-F.Chen, W.-C.Lin, *Entire or meromorphic functions sharing one value*, Comput. Math. Appl. 56(2008), 1876-1883.

Hong-Yan Xu
Jingdezhen Ceramic Institute
Department of Informatics and Engineering
Jingdezhen,Jiangxi 333403, China
e-mail: xhyhhh@126.com

Ting-Bin Cao
Nanchang University
Department of Mathematics
Nanchang, Jiangxi 330031, China
e-mail: tbcao@ncu.edu.cn or ctb97@163.com

Tang-Sen Zhan
Jingdezhen Ceramic Institute
Department of Informatics and Engineering
Jingdezhen,Jiangxi 333403, China
e-mail: ztangsen@yahoo.com.cn