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The fixed points and iterated order of some differential polynomials

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Abstract: This paper is devoted to considering the iterated order and the fixed points of some differential polynomials generated by solutions of the differential equation

$$f^{''} + A_1(z)f^{'} + A_0(z)f = F,$$

where $A_1(z)$, $A_0(z)$ ($\not\equiv 0$), F are meromorphic functions of finite iterated p-order.

Keywords: linear differential equations, differential polynomials, meromorphic solutions, iterated order, iterated exponent of convergence of the sequence of distinct zeros

AMS Subject Classification: 34M10, 30D35

References

- Belaïdi B., Oscillation of fixed points of solutions of some linear differential equations, Acta. Math. Univ. Comenianae 77 (2008), no. 2, 263–269.
- 2. Bernal L.G., On growth k-order of solutions of a complex homogeneous linear differential equations, Proc. Amer. Math. Soc. 101 (1987), 317-322.
- 3. Cao T.B., Yi H.X., On the complex oscillation of higher order linear differential equations with meromorphic functions, J. Syst. Sci. Complex. 20 (2007), no. 1, 135-148.
- 4. Chen Z.X., The fixed points and hyper order of solutions of second order complex differential equations, Acta Math. Sci. Ser. A Chin. Ed. 20 (2000), no. 3, 425-432 (in Chinese).
- 5. Hayman W.K., Meromorphic Functions, Clarendon Press, Oxford, 1964.
- Kinnunen L., Linear differential equations with solutions of finite iterated order, Southeast Asian Bull. Math. 22 (1998), no. 4, 385-405.
- Laine I., Nevanlinna Theory and Complex Differential Equations, Walter de Gruyter, Berlin, New York, 1993.
- Laine I., Rieppo J., Differential polynomials generated by linear differential equations, Complex Var. Theory Appl. 49 (2004), no. 12, 897-911.
- 9. Liu M.S., Zhang X.M., Fixed points of meromorphic solutions of higher order linear differential equations, Ann. Acad. Sci. Fenn. Math. 31 (2006), 191-211.
- Nevanlinna R., Eindeutige Analytische Funktionen, Zweite Auflage, reprint, Die Grundlehren der mathematischen Wissenschaften, 46, Springer, Berlin-New York, 1974.
- 11. Wang J., Yi H.X., Fixed points and hyper order of differential polynomials generated by solutions of differential equation, Complex Var. Theory Appl. 48 (2003), no. 1, 83-94.
- 12. Zhang Q.T., Yang C.C., The Fixed Points and Resolution Theory of Meromorphic Functions, Beijing University Press, Beijing, 1988 (in Chinese).