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**Meromorphic Solutions of a Differential Equation  
with Polynomial Coefficients**

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**Abstract.** We give new estimates for the maximum number  $M$  of distinct meromorphic solutions and also for the maximum number  $L$  of linearly independent meromorphic solutions of the first order differential equation

$$f' = P_0 + P_1 f + \cdots + P_n f^n, \quad n \geq 3,$$

where each  $P_k$  is a polynomial and  $P_n \neq 0$ . The estimate for  $M$  depends only on  $n$  and the number  $d$  of distinct zeros of  $P_n$ , while the estimate for  $L$  depends only on  $d$ .

**Keywords.** Meromorphic solutions, rational solutions, linearly independent solutions, differential equation, polynomial coefficients.

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