

CONVERGENT SOLUTIONS OF ORDINARY LINEAR HOMO- GENEOUS DIFFERENTIAL EQUATIONS IN THE NEIGHBORHOOD OF AN IRREGULAR SINGULAR POINT

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§ 1. Introduction

In this paper it will be shown that certain of the divergent asymptotic series which represent solutions of ordinary linear homogeneous differential equations in the neighborhood of an irregular singular point can be summed and replaced by convergent generalized factorial series. These results extend the earlier work of Horn [1]², W. J. Trjitzinsky [2], and R. L. Evans [3].

In Evans' paper [3], the existence of integral (8) on page 91 is questionable because the function $\Psi_\nu(\xi)$ may increase more rapidly than any exponential func-

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² All references are listed at the end of this paper.