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ON THE INTEGRABILITY OF A CLASS OF DIFFERENTIAL EQUATIONS

Biljana Zlatanovska¹,  and Boro M. Piperevski

e-mail: biljana.zlatanovska@ugd.edu.mk

Abstract: In this paper, a class of second-order linear differential equations is reviewed. For this class of B.S.Popov necessary and sufficient condition for reductable according to Frobenius is obtained. By using another method, the same condition is obtained where the existence of the natural number n is replaced by the existence of an integer n . For the same class of second-order linear differential equations, the case for reductable according to Frobenius which is independent from an exist of a number n is reviewed. In both cases, formulas of one particular solution and transformation to a system of first-order differential equations are obtained. In end, this theory is supported by examples.

Key words and phrases: Second-order linear differential equations, system of first-order differential equations, particular solution.

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¹ Goce Delcev University, Faculty of Computer Science
Krste Misirkov 10-A, Stip, North Macedonia

 Corresponding author

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