

## An Analytical Method for Solving General Riccati Equation

**Authors :** Y. Pala, M. O. Ertas

**Abstract :** In this paper, the general Riccati equation is analytically solved by a new transformation. By the method developed, looking at the transformed equation, whether or not an explicit solution can be obtained is readily determined. Since the present method does not require a proper solution for the general solution, it is especially suitable for equations whose proper solutions cannot be seen at first glance. Since the transformed second order linear equation obtained by the present transformation has the simplest form that it can have, it is immediately seen whether or not the original equation can be solved analytically. The present method is exemplified by several examples.

**Keywords :** Riccati equation, analytical solution, proper solution, nonlinear

**Conference Title :** ICODEDS 2017 : International Conference on Ordinary Differential Equations and Dynamical Systems

**Conference Location :** Paris, France

**Conference Dates :** March 29-30, 2017