



**OPTIMAL CONTROL OF SIR MODEL: IMPACT  
OF THE SPREAD OF EPIDEMICS**

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Received December 4, 2015

**Abstract**

The Adomian decomposition method (ADM) is a powerful method which considers the approximate solution of a non-linear equation as an infinite series which usually converges to the exact solution. In this paper, this method is proposed to solve some first-order differential equations. It is shown that the series solution converges to the exact solution for each problem. It is observed that the method is particularly suited for initial value problems with oscillatory and exponential solutions.

**Keywords and phrases:** Adomian decomposition method, initial value problem, convergent series.

**Pioneer Journal  
of Mathematics  
and Mathematical  
Sciences**



**Pioneer Scientific  
Publisher**