

Abstract

Lie Symmetry Analysis for the SIS Model of Epidemiology [†]

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A system of three nonlinear ordinary differential equations arising from the SIS model of epidemiology is transformed into a pair of equations, one first-order and the other second-order. This is a simple model proposed in 1927 by Kermack and Mckendick. The pair of equations is investigated for solutions through Sophus Lie's symmetry group theoretical methods. Unfortunately, a pure Lie approach does not adequately address the problem. We introduce modified symmetries to avert the obstacles.



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