

Step Method for Solving Nonlinear Two Delays Differential Equation in Parkinson's Disease

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Abstract : Parkinson's disease (PD) is a heterogeneous disorder with common age of onset, symptoms, and progression levels. In this paper we will solve analytically the PD model as a non-linear delay differential equation using the steps method. The step method transforms a system of delay differential equations (DDEs) into systems of ordinary differential equations (ODEs). On some numerical examples, the analytical solution will be difficult. So we will approximate the analytical solution using Picard method and Taylor method to ODEs.

Keywords : Parkinson's disease, step method, delay differential equation, two delays

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