ÚSTAV INFORMATIKY
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SEMINÁR ÚI SAV,
**ktorý sa bude konať vo štvrtok   25.4.2019 o 10.00 hod.
v zasadačke č.102, ÚI SAV**

Program:

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APPLICATION OF VARIATIONAL ITERATION METHOD IN SOLVING TYPHOID FEVER MODEL

Abstract

In this presentation, a deterministic mathematical model involving the transmission dynamics of typhoid fever is presented and studied. We tested for the existence and uniqueness of solution for the model using the Lipchitz condition to ascertain the efficacy of the model and proceeded to determine both the disease free equilibrium (DFE) and the endemic equilibrium (EE). Basic idea of the disease transmission using compartmental modeling is discussed. The aim of this presentation is to apply Variational Iteration Method (VIM) to solve typhoid fever model for a given constant population. This mathematical model is described by nonlinear first order ordinary differential equations. First, we find the solution of the model by using Variation Iteration Method (VIM). The validity of the VIM in solving the model is established by classical fourth-order Runge-Kutta method (RK4) implemented in Maple 18. In order to show the efficiency of the method we compare the solutions obtained by VIM and RK4. We illustrated the profiles of the solutions of each of the compartments, from which we speculate that the VIM and RK4 solutions agreed well. Thus, validating the reliability of VIM in finding the solution of an epidemic model.

Tešíme sa na stretnutie s Vami pri šálke kávy alebo čaju.

Ing. Ivana Budinská, PhD.
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