

## عنوان مقاله:

Application of homotopy analysis transform method to solve the modified non-linear epidemiological model of computer viruses

## محل انتشار:

سومین کنفرانس سیستم های تصمیم گیری هوشمند (سال: 1397)

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## خلاصه مقاله:

Susceptible-Infected-Recovered (SIR) computer virus propagation model is one of the important and applicable models to analyze, track and protect the computer systems against the computer viruses. The aim of this research is to present the novel and efficient method to solve the SIR model of computer viruses. This method is obtained by combining the homotopy analysis method and the Laplace transformations which is called the homotopy analysis transform method. The convergence theorem is proved to show the abilities of the proposed approach to solve the nonlinear epidemiological model of computer viruses. Several  $h$ -curves are demonstrated to show the convergence regions for various number of terms. In order to exhibit the precision of the scheme, the residual error functions are applied and by using these functions the optimal values of convergence parameter are obtained. The graphs of residual errors based on the optimal values of  $h$  demonstrate the efficiency of the suggested approach

## کلمات کلیدی:

Susceptible-Infected-Recovered model, Modified epidemiological model, Computer virus, Homotopy analysis method, Laplace transformation

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/855017>

