Abstract

A number of engineering problems have second-order ordinary differential equations as their mathematical models. In practice, we may have a large scale problem with a large number of degrees of freedom, which must be solved accurately. Therefore, treating the mathematical model governing the problems correctly is required in order to get an accurate solution. In this work, we use new implementation of reliable iterative method proposed by Temimi and Ansari namely (TAM) to solve vibration models in the forms of initial value problems of secondorder ordinary differential equations. Computational results show that our strategy is indeed effective. We obtain accurate solutions to the considered problems. Note that exact solutions are often not available, so they need to be approximated using some methods, such as the TAM.