



# NUMERICAL RESULTS FOR ORDINARY AND PARTIAL DIFFERENTIAL EQUATIONS DESCRIBING MOTIONS OF ELASTIC MATERIALS

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**Abstract.** We discuss an ordinary differential equation system proposed in [1] as a mathematical model for shrinking and stretching motions of elastic materials. Also, a numerical scheme due to the structure-preserving numerical method was constructed. Our aim of this paper is to compare the numerical results for periodic solutions by several methods in order to investigate their accuracy. We note that a proof for existence of periodic solutions of the ODE system is given. Finally, we derive a partial differential equation model from the ODE system and show numerical results for the PDE model.

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