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16. Applications

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Stability of systems under stochastic parametric excitation

The stability of nonlinear elastic and viscoelastic systems under stochastic excitation is investigated. The loads are assumed in the form of random stationary processes. The solution is obtained with the help of a numerical method, which is based on the method of the statistical simulation of input random processes and on the numerical solution of the system of nonlinear and linearized integro-differential equations, describing a nonperturbed and perturbed motion of the system. The estimation of the stability is carried out with the help of top Liapunov exponents.