

Dissipation of Mean Energy of Discretized Linear Oscillators under Random Perturbations

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ABSTRACT: This paper deals with the problem of correct asymptotic dissipation of mean energy functional related to numerical integration of systems of uncoupled linear oscillators under random perturbations. It is shown that the drift-implicit trapezoidal method provides numerical approximations which possess the correct asymptotic behavior of their mean energy functional compared to that of the underlying exact solution as integration time t advances to infinity.