



ANALYSIS OF CHAOTIC AND HYPERCHAOTIC CONSERVATIVE COMPLEX NONLINEAR SYSTEMS

G. M. MAHMOUD AND M. E. AHMED

Abstract:

The aim of this paper is to introduce and analyze chaotic and hyperchaotic conservative complex nonlinear systems. These systems appear in several branches of applied sciences. Lyapunov exponents are calculated to observe chaotic and hyperchaotic behaviors. The wide range of systems parameters at which chaotic and hyperchaotic solutions exist is calculated. The modules for complex variables are computed and plotted. The projections of chaotic and hyperchaotic solutions are shown in 3- spaces and 2-planes. The systems of this paper leave rooms for further studies in the near future, e.g. control and several types of synchronization of the solutions of these systems.

Keywords:

chaotic, hyperchaotic, conservative, complex, module, Lyapunov exponents

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