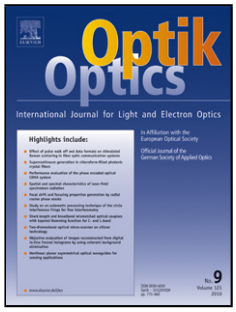

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A chaotic system with rounded square equilibrium and with no–equilibrium

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Abstract

Chaotic systems with an infinite number of equilibrium points and chaotic ones without equilibrium have received a significant attention in the last years because they belong to a class of systems with "hidden attractor". In this work, we introduce a three–dimensional chaotic system displaying both hidden attractors with infinite equilibria and hidden attractors without equilibrium. Surprisingly, when the system exhibits hidden attractors with infinite equilibria, it has a rounded square curve of equilibrium points. Dynamical properties of the new system are analyzed through equilibrium points, phase portraits, bifurcation diagram, and maximal Lyapunov exponents. Further-

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