Co-existing hidden attractors in a radio-physical oscillator system - DTU Orbit (17/12/2018)

Co-existing hidden attractors in a radio-physical oscillator system
The term 'hidden attractor' relates to a stable periodic, quasiperiodic or chaotic state whose basin of attraction does not overlap with the neighborhood of an unstable equilibrium point. Considering a three-dimensional oscillator system that does not allow for the existence of an equilibrium point, this paper describes the formation of several different coexisting sets of hidden attractors, including the simultaneous presence of a pair of coinciding quasiperiodic attractors and of two mutually symmetric chaotic attractors. We follow the dynamics of the system as a function of the basic oscillator frequency, describe the bifurcations through which hidden attractors of different type arise and disappear, and illustrate the form of the basins of attraction.

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