Bifurcation and Chaos of the Memristor Circuit

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Abstract : In this paper, a magnetron memristor model based on hyperbolic sine function is presented and the correctness proved by studying the trajectory of its voltage and current phase, and then a memristor chaotic system with the memristor model is presented. The phase trajectories and the bifurcation diagrams and Lyapunov exponent spectrum of the magnetron memristor system are plotted by numerical simulation, and the chaotic evolution with changing the parameters of the system is also given. The paper includes numerical simulations and mathematical model, which confirming that the system, has a wealth of dynamic behavior.