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Sliding mode synchronization of van der Pol emotion chaotic model. (Chinese. English summary) Zbl 07366874

Summary: The paper studied the sliding mode synchronization problem of integer order and fractional-order Van der Pol emotion chaotic model. The sufficient conditions for the master-slave systems realizing chaos synchronization are given using fractional-order calculus. The study illustrated that the fractional-order Van der Pol emotion chaotic model can realize synchronization under certain conditions. Numerical simulations verify the feasibility of the proposed method.

MSC:
93B12 Variable structure systems
37D45 Strange attractors, chaotic dynamics of systems with hyperbolic behavior
26A33 Fractional derivatives and integrals

Keywords:
fractional-order model; synchronization; van der Pol model; emotion model