论文

磁盘发电机系统的动力学研究及其在混沌同步中的应用

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The Dynamical Analysis of a Disk Dynamo System and Its Application in Chaos Synchronization

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摘要 本文通过构造适当的Lyapunov函数, 研究了磁盘发电机系统的最终有界集、正向不变集和全局指数吸引集, 得到了该系统界的四维椭球估计表达式. 然后将所得到的该系统界的估计应用到完全同步之中去, 并做出了相应的数值模拟.

关键词: 混沌系统   全局指数吸引集   数值模拟

Abstract: The ultimate bound, positively invariant set and globally exponentially attractive set of a disk dynamo system are investigated via constructing a Lyapunov function. Firstly, we derive a four-dimensional ellipsoidal bound for this system. Secondly, the boundedness of the system is applied to the complete chaos synchronization. Finally, the corresponding numerical simulations are performed.

Key words: chaotic system   globally exponentially attractive set   numerical simulations

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