



Application of Generalized Hamiltonian Systems to Chaotic Synchronization[◇]

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Abstract: In this paper, a method of chaotic synchronization is introduced which is obtained from the perspective of passivity-based state observer design in the context of Generalized Hamiltonian systems including dissipative and destabilizing vector fields. Two cases of chaotic synchronization, namely, the synchronization of some famous chaotic systems with and without time delay are analyzed. The numerical results are obtained by the nonlinear dynamical software, WinPP in this paper. The numerical results are in very good agreement with the theoretical analysis.

Keywords: *chaotic synchronization; generalized Hamiltonian canonical form; observer approach; time-delay systems.*

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