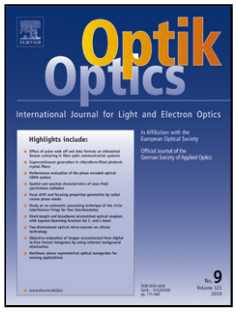

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Finite-time synchronization for multi-link complex networks via discontinuous control

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Abstract

This paper is concerned with finite-time synchronization problem for multi-link complex networks with two kinds of discontinuous control approaches, e.g., the intermittent control and the impulsive control. Based on the above two discontinuous control methods, comparing with previous continuous control approaches, some less conservative criteria are derived for the finite-time synchronization of the multi-link complex networks. We consider the model of multi-link complex network, which is split into some sub-networks based on different time-delays and each sub-networks can be any network forms. Multi-link complex network with different sub-networks may present some interesting dynamical phenomena. Simple intermittent feedback controller and impulsive feedback controller are designed to achieve finite-time synchronization between the drive network and response network. Several novel and useful finite-time synchronization criteria are also derived based on finite-time stability theory, intermittent and impulsive control techniques. Finally, two numerical simulations are provided

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