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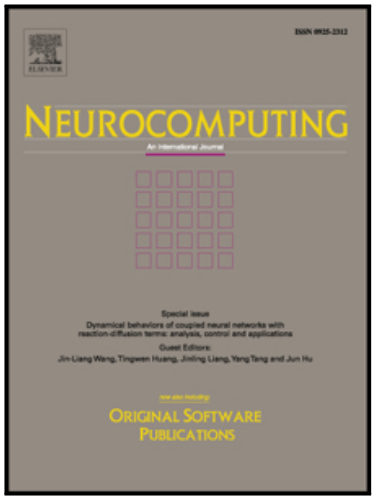

Set Stabilization of Boolean Networks under Pinning Control Strategy

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Set Stabilization of Boolean Networks under Pinning Control Strategy

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Abstract

In this paper, we study the set stabilization of Boolean networks (BNs) under pinning control strategy. First, the algebraic expression of BN is obtained by using semi-tensor product of matrices. Based on the algebraic expression, we give a method to choose pinning nodes, and achieve set stabilization by controlling these selected nodes. A matrix is further defined to design state feedback controllers. Based on the matrix set, state feedback controllers can be obtained quickly and the computational complexity can be reduced. Finally, an example is given to illustrate the design procedure of pinning controllers.

Key words: Boolean networks, Set stabilization, Pinning control, Semi-tensor product

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