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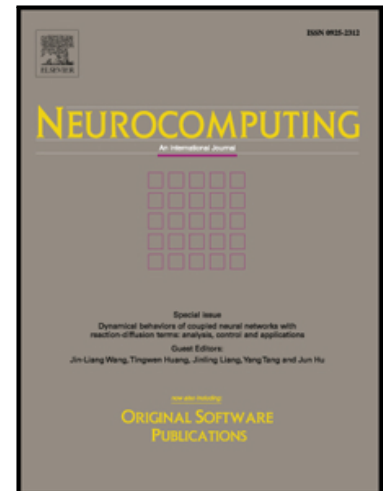
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Further stability analysis for delayed complex-valued recurrent neural networks*

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Abstract: This paper focuses on the stability problem for delayed complex-valued recurrent neural networks. Whether the complex-valued activation functions are explicitly expressed by separating real and imaginary parts or not, they are always assumed to satisfy the globally Lipschitz condition in the complex domain. For two cases of the activation functions, based on the homeomorphism theory and Lyapunov function approach new delay-dependent sufficient conditions to guarantee the existence, uniqueness, and globally asymptotical stability of the equilibrium point of system are obtained, respectively. For each case, several numerical examples are given to show the effectiveness and the advantages of the obtained results.

Keywords: Complex-valued neural networks, global stability, time-delay.

1 Introduction

In the past few years complex-valued recurrent neural networks have already become hot research fields and much attention from researchers has been paid to investigating them. The

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