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HOPFIELD NETWORKS WITH MULTIPLICATIVE NOISE IN AN ANISOTROPIC NORM SETUP*

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Abstract

A non symmetric version of Hopfield networks subject to state-multiplicative noise, is considered in an anisotropic norm setup. Such networks arise in the context of visuo-motor control loops and may, therefore, be used to mimic their complex behavior. In this paper, we adopt the Lur'e - Postnikov systems approach to generalize a Bounded Real Lemma like result of generalized Hopfield networks, to compute their anisotropic norm.

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1 Introduction

Hopfield networks ([19]) are symmetric recurrent neural networks which exhibit motions in the state space which converge to minima of energy. Symmetric Hopfield networks can be used to solve practical complex problems

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