Synchronization for Fractional FitzHugh-Nagumo Equations with Fractional Brownian Motion

xiuqi Huang[1], Hongfu Yang[1], and Xiangjun Wang[2]

[1]National University of Defense Technology
[2]Huazhong University of Science and Technology - Wuchang Campus

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Abstract

This paper is devoted to the study of Caputo-type fractional FitzHugh-Nagumo equations driven by fractional Brownian motion (fBm). We establish the existence and uniqueness of mild solution under some conditions on the coefficients. The exponential synchronization and finite-time synchronization for the stochastic FitzHugh-Nagumo equations are provided. The analysis of synchronization phenomenon for time-fractional FitzHugh-Nagumo equations perturbed by fBm are provided.

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