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**Stability analysis based on partition trajectory approach for switched neural networks with fractional Brown noise disturbance.** (English) Zbl 1380.93278

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Summary: In this brief, the stability problem based on feedback control for two types of stochastic neural networks driven by fractional Brown noise is considered. One class is the switched neural networks without time delays and the other one is with time delays. A novel analysis method, very different to the usual approach based on the Itô formula and infinitesimal operator, is proposed in this paper. By the idea of splitting time of trajectory and associating with Hölder inequality, some criteria are obtained to guarantee the switched neural networks with two types to be stable. In the end, two numerical examples and auxiliary figures are presented to show the feasibility and effectiveness for the proposed results.

**MSC:**

93E15 Stochastic stability in control theory
93D15 Stabilization of systems by feedback
93E03 Stochastic systems in control theory (general)
93D20 Asymptotic stability in control theory
60G22 Fractional processes, including fractional Brownian motion



**Keywords:**

$p$th moment; exponential stability; system trajectory; switched neural networks; fractional Brown noise

**Full Text:** DOI

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