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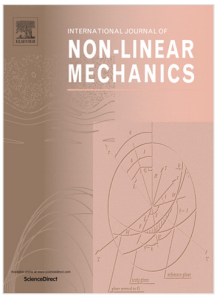

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Dynamical Analysis of the FitzHugh-Nagumo Oscillations through a Modified Van der Pol Equation with Fractional-order Derivative Term

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Highlights:

- A generalized Van der Pol equation with fractional-order derivative and parametric excitation is derived from the FitzHugh-Nagumo equations.
- The steady-state solutions, the amplitude-frequency equation and the stability condition are investigated.
- The dynamical effects of the fractional-order derivative and that of some other system parameters are addressed.

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