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Canards in the FitzHugh-Nagumo model

The ducks (French canards) are specific limit cycles associated with asymptotic phenomena. We studied them by means of a new method based on the locus of the inflection points of the phase space trajectories. The numerical method of one of the authors (NG) was also emploied. We showed that the curves of appearance and destruction of the canards are situated in the close neighbourhood of the curve of Hopf bifurcation values. We revealed the very short range for parameters within which the canards exist and the specific form of the corresponding oscillations. The connection with Bautin bifurcation was also made.