Synchronization in two coupling van der Pol oscillators

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In the last years the interest for the study on the dynamic behaviors presented by coupled nonlinear oscillators has been growing and a large number of science areas present real systems that can be modeled by these oscillators.

This work analyses the behavior of two coupled asymmetric van der Pol oscillators. In this case the oscillators and the coupling between them can model the behavior of the two cardiac pacemaker.

A special attention is given to the necessary conditions to got synchronization between the oscillators as well as the dynamics of system that shows how it evolve, and this study is made analyzing the Lyapunov and conditional transverse Lyapunov exponent.

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