

Abstract Submitted
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Competing Synchronization of Nonlinear Oscillators¹ EPAMINONDAS ROSA, Department of Physics, Illinois State University — Coupled nonlinear oscillators abound in nature and in man-made devices. Think for example of two neurons in the brain competing to get the attention of a third neuron, and eventually developing some sort of synchronization process. This is a common feature involving oscillators in general, and can be studied using numerical simulations and/or experimental setups. In this talk, results involving electronic circuits and plasma discharges will be presented showing interesting features related to the types of oscillators and to the types of couplings. In particular, for the case of two oscillators competing for synchronization with a third one, the target oscillator synchronizes alternately to one or the other of the competing oscillators. The time intervals of synchronous states vary in a random-like manner. Numerical and experimental results will be presented and the consistency between them will be discussed.

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Epaminondas Rosa
Department of Physics, Illinois State University

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