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Synchronization Dynamics of Coupled Anharmonic Plasma Oscillators JOHN LAOYE, Olabisi Onabanjo University, Ago-Iwoye, Nigeria, UCHECHUKWU VINCENT, Redeemer University, Nigeria, TAIWO ROY-LAYINDE, University of Ibadan, Nigeria — The synchronization of two identical mutually driven coupled plasma oscillators modeled by anharmonic oscillators was investigated. Each plasma oscillator was described by a nonlinear differential equation of the form: The model employed the spring-type coupling. Numerical simulations, including Poincare sections, time series analysis, and bifurcation diagram were performed using the fourth-order Runge-Kutta scheme. The numerical value of the threshold coupling Kth was determined to be approximately 0.15.

John Laoye
Olabisi Onabanjo University, Ago-Iwoye

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