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Title:	Suppression and revival of oscillations through time-varying interaction
Authors:	Chaurasia, S.S. (/jspui/browse?type=author&value=Chaurasia%2C+S.S.) Sinha, Sudeshna (/jspui/browse?type=author&value=Sinha%2C+Sudeshna)
Keywords:	Stuart-Landau oscillators Time-varying networks Hopf bifurcation
Issue Date:	2019
Publisher:	Elsevier
Citation:	Chaos, Solitons and Fractals, 118, 249-254.
Abstract:	We explore the bifurcations and emergent dynamical patterns in a system of coupled Stuart-Landau oscillators whose coupling form varies periodically in time. We find, through bifurcation diagrams and Basin Stability analysis, that there exists a window in coupling strength where the oscillations get suppressed. Beyond this window, the oscillations are revived again. A similar trend emerges with respect to the relative predominance of the coupling forms, with the largest window of fixed point dynamics arising where there is balance in the occurrence of the coupling forms. Further, significantly, more rapid switching of coupling forms yields large regions of oscillation suppression. Lastly, we propose an effective model for the dynamics arising from switched coupling forms and demonstrate how the bifurcations in this model capture the basic features observed in numerical simulations and also offers an accurate estimate of the fixed point region through linear stability analysis.
Description:	Only IISERM authors are available in the record.
URI:	<a href="https://www.sciencedirect.com/science/article/pii/S0960077918306453">https://www.sciencedirect.com/science/article/pii/S0960077918306453</a> ( <a href="https://www.sciencedirect.com/science/article/pii/S0960077918306453">https://www.sciencedirect.com/science/article/pii/S0960077918306453</a> ) <a href="http://hdl.handle.net/123456789/2350">http://hdl.handle.net/123456789/2350</a> ( <a href="http://hdl.handle.net/123456789/2350">http://hdl.handle.net/123456789/2350</a> )
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