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Title:	Emergent Spatiotemporal patterns in Stuart-Landau Oscillator Networks
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Abstract:	Understanding the dynamics that arise in complex systems is crucial to the advancements of numerous fields from neuroscience to engineering. Stuart-Landau oscillator networks serve as a powerful model system for studying emergent behavior due to their simplicity and their ability to capture rich dynamics. In this study, we will study the emergent dynamics in Stuart-Landau oscillator networks under static and time-varying couplings. Our study will focus on how different network structures and coupling strengths influence the dynamics exhibited through qualitative (spatiotemporal analysis) and quantitative (global order parameter) methods. We hope to uncover novel dynamical patterns and transitions arising from the temporal evolution of the network. We hope, our findings will contribute to the fundamental understanding of complex network dynamics but also hold practical implications across various disciplines. The work holds the potential to lay the groundwork for the design and control of complex systems, advancing our ability to predict and manipulate emergent phenomena in diverse real-world applications.
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