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Title:	Dynamical Effects of Blinking Connections
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Keywords:	Dynamical Effects Time series of the network Bifurcation diagram Blinking Connections with Environment
Issue Date:	23-Aug-2018
Publisher:	IISERM
Abstract:	<p>This thesis focusses on oscillation revivals in networks of nonlinear systems mediated by a common environment. Specifically, we consider groups of Landau- Stuart (LS) oscillators, in similar or distinct dynamical states, connected indirectly via a common environment. Such an environment was shown to aid the revival of suppressed oscillations at sufficiently high coupling strengths [1]. We extend this study further by considering the dynamical effects of single and multiple blinking connections. First, we consider a single blinking oscillator-environment connection in a network comprised of two groups, with two oscillators in each group. We explore different combinations of dead and oscillatory group/s. We find that when both the groups are initially in the steady-state (OD) regime, their oscillations revive when one of the connections blinks on-off. The amplitude of these oscillations increases with increasing time-period t_{pd} of blinking. When one of the groups is initially in the oscillatory regime, the revived oscillations display distortions in the waveforms of their time series due to the connection switching on-off. Further, the bifurcation diagram for local minima and maxima which showed only one minima and one maxima for static connections, now exhibits a continuum or band of minimas and maximas. For multiple blinking connections we first investigate the scenario where one group had blinking connections, while the other group has all static connections. We then go on to study the case where all oscillator-environment connections are blinking. There were two distinct cases we consider here. First we consider the links to switch on-off together (i.e. in-phase blinking connections) and secondly, the links switch on-off alternately (i.e. out of phase blinking connections). When connections of one group are blinking in-sync, the oscillations do not revive till 1.4. On the other hand, the oscillations revive quickly if the connections alternately blink on-off.</p>
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