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Title:	Coupling induced logical stochastic resonance
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Abstract:	In this work we will demonstrate the following result: when we have two coupled bistable sub-systems, each driven separately by an external logic input signal, the coupled system yields outputs that can be mapped to specific logic gate operations in a robust manner, in an optimal window of noise. So, though the individual systems receive only one logic input each, due to the interplay of coupling, nonlinearity and noise, they cooperatively respond to give a logic output that is a function of both inputs. Thus the emergent collective response of the system, due to the inherent coupling, in the presence of a noise floor, maps consistently to that of logic outputs of the two inputs, a phenomenon we term coupling induced Logical Stochastic Resonance. Lastly, we demonstrate our idea in proof of principle circuit experiments.
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