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# Resonance induced by repulsive interactions in a model of globally-coupled bistable systems

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We show the existence of a competition-induced resonance effect for a generic globally coupled bistable system. In particular, we demonstrate that the response of the macroscopic variable to an external signal is optimal for a particular proportion of repulsive links. Furthermore, we show that a resonance also occurs for other system parameters, like the coupling strength and the number of elements. We relate this resonance to the appearance of a multistable region, and we predict the location of the resonance peaks, by a simple spectral analysis of the Laplacian matrix.

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