



Library Indian Institute of Science Education and Research Mohali



DSpace@IISERMohali (/jspui/)
/ Publications of IISER Mohali (/jspui/handle/123456789/4)
/ Research Articles (/jspui/handle/123456789/9)

Please use this identifier to cite or link to this item: <http://hdl.handle.net/123456789/4743>

Title:	Reconfigurable Noise-Assisted Logic Gates Exploiting Nonlinear Transformation of Input Signals
Authors:	Sinha, Sudeshna (/jspui/browse?type=author&value=Sinha%2C+Sudeshna)
Keywords:	Noise-Assisted Logic Gates Exploiting Nonlinear
Issue Date:	2022
Publisher:	American Physical Society
Citation:	Physical Review Applied, 1 (1), 14061
Abstract:	We demonstrate the direct implementation of all basic logical operations utilizing a single bistable system driven by nonlinearly transformed input signals, in the presence of noise. Exploiting the hopping between the dynamical states of the bistable system, assisted by the noise floor, in response to the transformed inputs, allows the implementation of the full set of logic operations. So this idea can form the basis of the design of a dynamical computing element that can be rapidly morphed to yield any desired logic gate by varying just a single control parameter. Further, the results are verified in electronic circuit experiments, demonstrating the robustness of the concept and the potential of this idea to be realized in wide-ranging systems.
Description:	Only IISER Mohali authors are available in the record.
URI:	https://doi.org/10.1103/PhysRevApplied.18.014061 (https://doi.org/10.1103/PhysRevApplied.18.014061) http://hdl.handle.net/123456789/4743 (http://hdl.handle.net/123456789/4743)
Appears in Collections:	Research Articles (/jspui/handle/123456789/9)

Files in This Item:

File	Description	Size	Format	
Need To Add...Full Text_PDF.pdf (/jspui/bitstream/123456789/4743/1/Need%20To%20Add%e2%80%a6Full%20Text_PDF..pdf)		15.36 kB	Adobe PDF	View/Open (/jspu

[Show full item record \(/jspui/handle/123456789/4743?mode=full\)](#)

[Statistics \(/jspui/handle/123456789/4743/statistics\)](#)

Items in DSpace are protected by copyright, with all rights reserved, unless otherwise indicated.