

Review of: "Ternary instantaneous noise-based logic"

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Potential competing interests: No potential competing interests to declare.

Multivalued logic, studied for many decades, is an established field with its own annual conference:

<https://ieeexplore.ieee.org/xpl/conhome/1000485/all-proceedings>

So, I was quite surprised that of 18 references cited, only three (9, 17, 18) are to work by other researchers. All three of the latter can be characterized as elementary/tutorial and only one is explicitly related to noise-based logic.

The proposal in this manuscript remains at the conceptual stage: No concrete implementation or performance (circuit design, cost, latency, or energy efficiency) is discussed. Implementation or simulation is needed for a fair comparison of the proposed method to competing schemes.

Given the similarity with probabilistic computing, a discussion of how the two methods are related and/or different might be useful.

Kaiser, J. and S. Datta, "Probabilistic computing with p-bits," *Applied Physics Letters*, 119 (15), 2021, p. 150503.

Chowdhury, S. et al., "A full-stack view of probabilistic computing with p-bits: devices, architectures and algorithms," *IEEE J. Exploratory Solid-State Computational Devices and Circuits*, 2023.