

# One-side MinFlip Problem is NP-Complete

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We study the problem of finding optimal setting of cells in permutation diagrams so as to minimize their thickness. This problem was introduced by Golumbic and Kaplan [1] with respect to the applications of permutation diagrams in VLSI circuit design and their connections with the clique problem for permutation graphs. Our main result is showing NP-completeness of the simplified problem, which allows flipping cells only on one side of the diagram. This resolves the open problem posed in [1].

[1] M.C.Golumbic and H.Kaplan. "Cell flipping in permutation diagrams". Symposium on Theoretical Aspects of Computer Science. LNCS 1373. Springer, 1998. 557-586.