

# On a claim of computational complexity

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There are well-known unsolved problems of computational complexity. One of them is the problem of whether any problem whose solution can be verified in polynomial time is solvable in polynomial time. That is, whether the class NP equals the class P. I have become aware that someone has tried to resolve this problem. Although it was refuted early, in 2009, they updated the algorithm that supposedly supported the “resolution” (the most recent version is from 2017) and, unfortunately, the updated version hasn’t been discussed or refuted since 2009. (And I believe the updated “resolution” should be refuted, but I don’t see how.)

Thus, because I am interested in seeking closure on this matter, I write this page to bring the matter to the attention of researchers of algorithms and computational complexity.

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I have become aware of the following.

In 2008-2009, J. Aslam published a striking claim on computational complexity, namely that the polynomial-time hierarchy collapses to the class of polynomial-time solvable problems, and thus, among other things,  $P=NP$  (a claim that is widely believed to be false), and gave an algorithm that supposedly supported that claim:

- <https://arxiv.org/abs/0812.1385v9>

The Collapse of the Polynomial Hierarchy:  $NP = P$

In 2009, Ferraro et al. published a response to J. Aslam’s  $P=NP$  “proof”, version 9, in 2009, in which the “proof” is refuted:

- <https://arxiv.org/abs/0904.3912>

After 2009, however, J. Aslam updated the “proof” that  $P=NP$  and the algorithm that supposedly supports it; the latest version, version 26, dates from 2017 and is found at:

- <https://arxiv.org/abs/0812.1385v26>

An Extension of the Permutation Group Enumeration Technique (Collapse of the Polynomial Hierarchy:  $NP = P$ )

(See also J. Aslam’s “**Response to Refutation**<sup>1</sup>”.)

And what is surprising to me is that, for such a remarkable claim (namely  $P=NP$ ) it’s a shame that it has gone uncited and unreviewed since 2009, as far as I am aware. (In my view, the new claimed “proof” should be refuted as well, but I don’t see how.)

Has version 26 been discussed, affirmed, and/or refuted anywhere?

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<sup>1</sup><https://arxiv.org/abs/0906.5112>