

# Review of: "NP on Logarithmic Space"

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**Potential competing interests:** No potential competing interests to declare.

I reviewed this paper in an earlier version, v3, and have not changed my view of the current version (v4). At the start of the paper, the method of the paper should be clearly articulated. Provided the definitions are standard then they can be added as a reference. It is initially puzzling why the first part of the paper discusses time complexity classes P and NP, but they are used in the claim that NP is a subset of  $L^L$ , which I assume is the logarithmic space complexity class with a logarithmic space oracle (perhaps in the sense that polynomial time verifiable decision problems have logarithmic space requirements). As far as the content of the paper are concerned, it is not clear why Hypothesis 1 is true, which is the claim made in Theorem 6. The comments in my previous review of referencing Savitch's theorem still stand, and it would also be useful how the known result  $NL=Co-NL$  (see [https://en.wikipedia.org/wiki/Immerman–Szelepcsényi\\_theorem](https://en.wikipedia.org/wiki/Immerman–Szelepcsényi_theorem)) is.

Overall this paper needs to be much clearer before it is publishable.