

1. 1st arXiv version: The claim that the polycyclic languages are closed under complement is false. In terms of automata, this could be seen by noting that to recognize the complement, a final sink state has to be added, which violates the defining condition of being polycyclic. But it could also be easily seen by my recent result (FCT 2021) that this language class coincides with the class of regular sparse languages, which is (obviously) not closed under complement.

Fixed in the published version and the 2nd arXiv version (20 July 2020).

2. I wrongly formalized the condition that every strongly connected component consists of precisely one cycle. More specifically, I wrote (page 7, first paragraph in the published version), for a strongly connected component S and every state $p \in S$,

$$|\{\mu(p, x) \mid x \in \Sigma, \mu(p, x) \text{ is defined}\} \cap S| \leq 1$$

in the paper. For example, this formula allows the possibility of two transitions labeled by different letters and ending at the same state in S (and so, in particular, a single state with two self-loops labeled by two distinct letters), which should be excluded. The correct formula is

$$|\{x \mid x \in \Sigma \text{ and } \mu(p, x) \text{ is defined and in } S\}| \leq 1,$$

i.e., at most one transition (the definition is for deterministic automata) goes from every state in S to a state in S . Note that, however, many transitions could go to states outside of S and that the above set is empty iff $S = \{s\}$ and s has no self-loop.

Fixed in 2nd arXiv version (20 August 2021).