

Reviewer 1

ISSUE

something went wrong on page 5, line 140: “For intermediate tucks, and to avoid...” the symbols for Tie3 are wrong.

Response

Fixed.

ISSUE

The labels used in the various grammars are inconsistent. While this does not invalidate the results, it makes it substantially more difficult to understand the role of each rule. For instance, I do not understand the logic in introducing in the first grammar on page 6, while this was not present in the first grammar in Section 4.1. (I think it is more clear with “last” present)

Response

“last” introduced to the first grammar in 4.1 as well as a short explanatory note.

ISSUE

In the grammar given in 4.2, can refer to either information at the current position (for instance : “A this stage the surrounding context has two more T than $W \bmod 3$ ”) or information about the content (for instance : this is a tuck starting with W). This is very annoying and I think unnecessarily complicates the grammar and misses the opportunity of fully using the power of Theorem 1. I suggest: \rightarrow (the 2 hints that $\#W - \#T = 2 \bmod 3$ inside) \rightarrow (the 1 hints that $\#W - \#T = 1 \bmod 3$ inside) and both to , which indicates that $\#W - \#T \bmod 3 = X$.

In this way, with minor adjustments, one needs only 3 rules instead of 6 or , one only ever considers $\#W - \#T$ (not $\#T - \#W$, which only complicates things), and the grammar of 4.2 only ever uses labels that refer to their content, not the position (which is a legacy from the original tie problem, which Theorem 1 dispenses us of). Simplifying the grammar in this way might also be helpful for the generating function that memory-bombed later in the paper.

Response

Grammar revised. This did indeed help the last generating function significantly, though the resulting generating function is not very pretty.

We wish to thank the reviewer for this suggestion.

ISSUE

When defining the grammars, particularly in 4.2, a reminder on the precedence of $|$ would be useful. More spacing would also be helpful.

Response

Spacing added. Bracketing mostly removed.

ISSUE

Theorem 1 should be rephrased: “if the position is preceded by...” “If the subsequence of the last $2k$ W or T symbols is such that”

Response

Fixed.

ISSUE

The automaton on page 7 and its description don’t match: “Execution starts in the middle node” ???

Response

Text clarified.

ISSUE

Page 7, line 179 “At most context-free” \rightarrow “At worst context-free”. This introduces a value judgement (more properties $==$ better), but what does it really mean if left as is?

Response

Replaced with “either regular or context-free”.

ISSUE

Page 10, line 249: Unclear to me what U^*UU is.

Response

The grammar in 4.2 is amended, and the surrounding text extended to explain the symbol \cdot .

ISSUE

The counts are now dependent on the correct implementation of a Maple package, and the correct entering by the authors of the grammar they described.

I didn't check either.

Response

We have included this observation in the discussion.

Reviewer 2

Reviewer 2 did not bring up any issues.