Nth Flips Are Fully Unavoidable

Elijah Ehrlund, Independent

A word W is formally defined in combinatorics as a string of mathematical symbols that is dependent on an alphabet Σ. Let a flip be defined as a non-empty factor uv and vu, where $|u|$ and $|v|$ follow a repeated pattern in some form of $|u| = kn_1, |v| = kn_2$, where $n_1, n_2 \in \mathbb{N}$. Let $\mathcal{Q}$ denote a set of any valid flips, where we conjecture $\forall W \in \Sigma^{\mathbb{N}_{\geq 2}}$ *(any possible alphabet with more than one element)*, $\exists \mathcal{F} \in \textsc{Fac}(W) : \mathcal{F}$ *is a n-flip for a given* $\mathcal{F} \in \mathcal{Q}$.

Keywords: combinatorics on words, pattern avoidance, word flips