

Stanley-Wilf limits of layered patterns

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We prove that the Stanley-Wilf limit of any layered permutation of length k is at most $4k^2$, which is tight up to a multiplicative constant. For specific layered patterns, we are able to give more precise upper bounds: notably, we prove that the Stanley-Wilf limit of the pattern 1324 is at most 16.

These bounds follow from a general result showing that any permutation avoiding a pattern of a special form can be obtained by merging two permutations, each of which avoids a smaller pattern.

(This is joint work with Anders Claesson and Einar Steingrímsson)