

Schemes for Pattern-Avoiding Words

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The enumeration schemes of Zeilberger and Vatter can be used to automate the enumeration of many permutation classes. Their work studies elements of S_n that avoid patterns in S_n . These schemes can be extended in several ways. I will first discuss modifications of Zeilberger's prefix schemes to count words in $[k]^n$ that avoid sets of permutation patterns (where the patterns to be avoided do not have repeated letters, but the words in $[k]^n$ may). I will also discuss modifications of Vatter's schemes to count words in $[k]^n$ avoiding patterns with repeated letters.