

Generating sets for Symmetric and Alternating groups

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Standard generating sets for the symmetric group S_n are well-known, for example $\{(1, 2), (1, 2, 3, \dots, n)\}$, $\{(1, 2, 3, \dots, n-1), (1, 2, 3, \dots, n)\}$, $\{(1, 2), (2, 3), (3, 4), \dots, (n-1, n)\}$, among others.

We consider small sets of generators, typically sets of cardinality 2. Can one arbitrarily specify the first generator? What conditions can be imposed on the number of cycles of the generators, or other statistics? These are some of the questions that will be tackled during this talk.

Keywords: permutations, symmetric groups, alternating groups