Recent progress on generalized patterns

Einar Steingrímsson
Department of Mathematics
Chalmers University of Technology & Göteborg University
S-412 96 Göteborg, Sweden

March 1, 2005

We write a classical permutation pattern with dashes between the letters, such as 1-3-2, to indicate that the letters in an occurrence of this pattern need not be adjacent in the permutation.

In a generalized permutation pattern, we may require that some of the adjacent letters in the pattern be adjacent in an occurrence in the permutation. This is indicated by the absence of a dash, so in an occurrence of 1-32 the letters corresponding to 3 and 2 must be adjacent in the permutation. Thus, 1423 contains only one occurrence of 1-32, namely the sequence 142, although 143 is another occurrence of 1-3-2.

I will review some of the recent progress on generalized patterns and some of their intriguing connections to other parts of combinatorics.