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A permutation  $\pi$  avoids a consecutive pattern  $\sigma$  if no subsequence of adjacent entries of  $\pi$  is in the same relative order as the entries of  $\sigma$ . For example, alternating permutations are those that avoid the consecutive patterns 123 and 321.

I will discuss some results on the enumeration of permutations that avoid consecutive patterns. One of the tools used is the cluster method of Goulden and Jackson, based on inclusion-exclusion, which reduces the enumeration of these permutations to counting linear extensions of certain posets. We obtain differential equations for the generating functions counting occurrences of certain consecutive patterns.

I will also show that among consecutive patterns of length  $m$ , the pattern  $12 \dots m$  is the most avoided one, while the pattern  $12 \dots (m-2)m(m-1)$  is the least avoided one. (Received June 29, 2012)