Expected Patterns in Permutations Avoiding 123

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In the set of all patterns in S_n, it is clear that each k-pattern occurs equally often. If we instead restrict to the class of permutations avoiding a specific pattern, the situation quickly becomes more interesting. Miklós Bóna recently proved that, surprisingly, if we consider the class of permutations avoiding the pattern 132, all other non-monotone patterns of length 3 are equally common. In this talk I examine the class $Av(123)$, and give exact formula for the occurrences of each length 3 pattern. While this class does not break down as nicely as $Av(132)$, we find some interesting similarities between the two and prove that the number of 231 patterns is the same in each.