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**Jeffrey B. Remmel\*** (jremmel@ucsd.edu), Department of Mathematics, University of California, San Diego, La Jolla, CA 92093-0112. *Generating functions for the number of consecutive occurrences of non-overlapping patterns in permutations and cycles.* Preliminary report.

We say that a permutation  $\tau \in S_j$  is non-overlapping if the smallest  $n$  for which there is a permutation  $\sigma \in S_n$  such that  $\sigma$  has two consecutive occurrences of the pattern  $\tau$  is  $n = 2j - 1$ . We show how one can derive the generating function for the number of consecutive occurrences of a non-overlapping permutation  $\tau$  in  $S_n$  by applying appropriate homomorphisms defined on the ring of symmetric functions to a simple symmetric function identity. Our result allows us to prove a conjecture of Elizade that such generating functions depend only on the length of  $\tau$  and its initial and final elements. We prove similar results for the number of consecutive cyclic occurrences of a non-overlapping permutation  $\tau$  in the set of  $n$ -cycles of  $S_n$ . This joint work with Adrian Duane and Miles Jones. (Received February 15, 2010)