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**Christopher R. Cornwell\*** (ccornwell@towson.edu) and **Nathan McNew**. *Unknotted cycles*. Preliminary report.

From a permutation without fixed points (a derangement) there is a natural way to generate a grid diagram of a link. A knot is obtained when the cycle type is that of a single cycle. Call a derangement an *unknotted cycle* if the corresponding grid diagram is of the unknot. Such diagrams are sometimes considered in combinatorics – for example, in the study of pattern avoiding permutations.

The (large) Schröder numbers form a sequence of numbers appearing in several counting contexts. They count the number of separable permutations, permutations that avoid the patterns 2413 and 3142. We show that the  $n^{\text{th}}$  Schröder number equals the number of unknotted cycles on  $n + 1$  elements. The proof involves both combinatorial techniques and Bennequin's inequality. (Received August 20, 2019)