

**Probabilistic and Combinatorial Aspects  
of the Card-Cyclic to Random Insertion Shuffle**

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*Technion*

Consider a permutation  $\sigma \in S_n$  as a deck of cards numbered from 1 to  $n$  and laid out in a row, where  $\sigma_j$  denotes the number of the card that is in the  $j$ -th position from the left. We study some probabilistic and combinatorial aspects of the shuffle on  $S_n$  defined by removing and then randomly reinserting each of the  $n$  cards once, with the removal and reinsertion being performed according to the original left to right order of the cards. The novelty here in this nonstandard shuffle is that every card is removed and reinserted exactly once. The bias that remains turns out to be quite strong, and takes on some unusual forms.