DYNAMICS BEHIND
RANDOM PARTITIONS AND RANDOM PERMUTATIONS

PIOTR ŚNIADY
Institute of Mathematics, Polish Academy of Sciences, ul. Śniadeckich 8, 00-656 Warszawa, Poland
e-mail: p.sniady@impan.pl

We investigate a class of questions which fit into the following framework: what happens to the output of Robinson–Schensted–Knuth correspondence applied to a random (finite or infinite) sequence or permutation if the input is locally modified? Some concrete versions of this problem can be equivalently formulated as questions about Schützenberger’s evacuation (shown in Figure 1) applied to a random (finite or infinite) standard Young tableaux filling some prescribed shape. Is there some law of large numbers which describes the asymptotics of such random zig-zag lines? What happens if we iterate such dynamic transformations? Is there some hydrodynamic limit?

References

Figure 1. (a) A part of a large Young tableau. The highlighted path starts in the corner, then moves up or to the right, always choosing the the box with a smaller number. (b) The outcome of ‘sliding’ of the boxes along the highlighted path.