

Selected asymptotic properties of the Robinson--Schensted--Knuth algorithm and jeu de taquin in the context of the Representation Theory of the Symmetric Group.

We will start with motivations of our combinatorial-representation theory research. In particular, we will recall the basics of the Representation Theory.

Then we will introduce the Robinson--Schensted--Knuth algorithm and explain its role in the research of the representation theory of the symmetric group S_n . We will learn about some asymptotic properties of the RSK applied to a random permutation.

The second part (if time allows) will be focused on the jeu de taquin algorithm and the problem of finding typical shape of the sliding path in a random tableau.