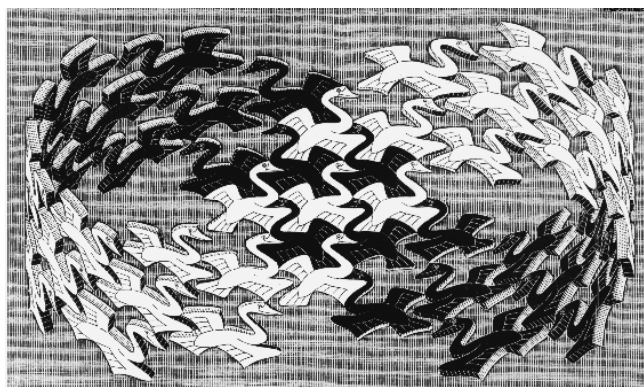




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**Representation theory, geometry and
combinatorics, from
Young tableaux to the loop Grassmannian**

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Abstract: A little more than 100 years ago, Issai Schur published his pioneering PhD thesis on the representations of the group of invertible complex $n \times n$ - matrices. At the same time, Alfred Young introduced what later came to be known as the Young tableau. The tableaux turned out to be an extremely useful combinatorial tool in representation theory, but they are also a very convenient instrument for the investigation of geometric problems related to Grassmann varieties, for example in K -theory or in the standard monomial theory. Later, in the connection with quantum groups and crystal bases, once again the Young tableaux turned out to be a natural tool to control the combinatorial aspects of the theory.

This talk will explore a few of these appearances of the ubiquitous Young tableaux and also discuss some more recent generalizations of the tableaux and the connection with the geometry of the loop grassmannian.