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*On standard monomial theory*



Jeudi 29  
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17h00-18h00

The answer to the question of What is Standard Monomial Theory depends a bit on whom one asks. In connection with representation theory, one of the aims of standard monomial theory is to find an explicit basis of representations together with a useful (whatever this precisely means) indexing system. This quest leads to interesting connections between problems in combinatorics and the geometry of Schubert varieties. In the 1940's, Hodge gave a basis for the homogeneous coordinate ring of the Grassmannian for its canonical Plücker embedding, in terms of certain monomials in the Plücker coordinates, the so-called standard monomials.

Hodge's ideas have been further developed by many people. The term standard monomial can be found in Groebner basis theory as well as in the program initiated by Seshadri to investigate Schubert varieties in arbitrary generalized flag varieties. In the talk, we will give an introduction to the theory of standard monomials (following Seshadri) and address some of the recent developments, for example connections to Newton-Okounkov theory.