Lie Groups and Representation Theory Seminar at the University of Tokyo

リー群論・表現論セミナー

DATE March 24 (Tue), 2015, 18:00–19:30

PLACE Room 126, Graduate School of Mathematical Sciences

SPEAKER **Piotr Pragacz** (Institute of Mathematics, Polish Academy of Sciences)

TITLE A Gysin formula for Hall–Littlewood polynomials

ABSTRACT Schubert calculus on Grassmannians is governed by Schur S-functions, the one on Lagrangian Grassmannians by Schur Q-functions. There were several attempts to give a unifying approach to both situations. We propose to use Hall–Littlewood symmetric polynomials. They appeared implicitly in Hall's study of the combinatorial lattice structure of finite abelian p-groups and in Green's calculations of the characters of $GL(n)$ over finite fields; they appeared explicitly in the work of Littlewood on some problems in representation theory. With the projection in a Grassmann bundle, there is associated its Gysin map, induced by pushing forward cycles (topologists call it "integration along fibers"). We state and prove a Gysin formula for HL-polynomials in these bundles. We discuss its two specializations, giving better insights to previously known formulas for Schur S- and P-functions.