Pragacz, Piotr

On a certain family of $U(b)$-modules. (English) Zbl 1390.14164


This paper is a survey paper about representations of $U(b)$ and KP modules. A good example for $U(b)$ are Demazure modules. They are given by spaces of sections of line bundles on Schubert varieties in flag manifolds. They were invented by M. Demazure [Ann. Sci. Éc. Norm. Supér. (4) 7, 53–88 (1974; Zbl 0312.14009)]. On the other hand KP modules, though related to Schubert varieties, are different. In the beginning of 1980s A. Lascoux and M.-P. Schützenberger [C. R. Acad. Sci., Paris, Sér. I 294, 447–450 (1982; Zbl 0495.14031)] discovered Schubert polynomials. They are certain polynomial lifts of cohomology classes of Schubert varieties in flag manifolds. Lascoux conjectured in 1983: There should be a functorial version of this construction. It was solved affirmatively by W. Kraskiewicz and the author [C. R. Acad. Sci., Paris, Sér. I 304, 209–211 (1987; Zbl 0642.13011)]. The so-obtained modules were called Kraskiewicz-Pragacz modules in short KP modules by M. Watanabe [J. Algebra 443, 422–429 (2015; Zbl 1326.14128)].

For the entire collection see [Zbl 1382.14002].

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KP modules; Demazure modules; highest weight representations; Schubert varieties; flag manifolds; Schur functors; Schur functions