מכון ויצמן למדע

THE WEIZMANN INSTITUTE OF SCIENCE

FACULTY OF MATHEMATICS AND COMPUTER SCIENCE

Algebraic Geometry and Representation Theory Seminar

Room 155 ,Ziskind Building
on Tuesday, Jul 09, 2019
at 11:15

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Translation Functors of Categories O for Root-Reductive Lie Algebras

Abstract:

Root-reductive Lie algebras form a special type of reasonably well behaved infinite-dimensional Lie algebras. In this talk, we shall define a version of Bernstein-Gelfand-Gelfand categories O for root-reductive Lie algebras, which we called extended categories O and briefly discuss some properties of these categories. Let g be a rootreductive Lie algebra containing a splitting Borel subalgebra b satisfying a special additional condition called the Dynkin condition. The extended category O corresponding to g and b is denoted by O-bar.

The category O-bar can be decomposed analogously to the finite-dimensional cases into blocks. The main object of this talk is to give a construction of translation functors of O-bar. Then we shall see that some objects such as tilting modules arise by applying the translation functors to Verma modules just as in the finite-dimensional cases. Furthermore, the translation functors establish equivalences between some blocks of the category O-bar.