
THE WEIZMANN INSTITUTE OF SCIENCE
FACULTY OF MATHEMATICS AND COMPUTER SCIENCE
Algebraic Geometry and Representation Theory Seminar

Room 108 ,Elaine and Bram Goldsmith Building
on Tuesday, Apr 25, 2017at 11:15

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A new category of $\mathfrak{sl}(\infty)$ -modules related to Lie superalgebras

Abstract:

The (reduced) Grothendieck group of the category of finite-dimensional representations of the Lie superalgebra $\mathfrak{gl}(m|n)$ is an $\mathfrak{sl}(\infty)$ -module with the action defined via translation functors, as shown by Brundan and Stroppel. This module is indecomposable and integrable, but does not lie in the tensor category, in other words, it is not a subquotient of the tensor algebra generated by finitely many copies of the natural and conatural $\mathfrak{sl}(\infty)$ -modules. In this talk, we will introduce a new category of $\mathfrak{sl}(\infty)$ -modules in which this module is injective, and describe the socle filtration of this module. Joint with: I. Penkov, V. Serganova