



Special Colloquium

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"LIE SUPERALGEBRAS VIA SCHUR-WEYL DUALITY AND CATEGORIFICATION "

In this talk, I will outline an approach to understand and describe the category of finite dimensional representations of a classical Lie superalgebra. We first recall the basics on classical Lie superalgebras, certain natural generalization of complex semi-simple Lie algebras that arise for example in physics in the study of supersymmetries. In contrast to the situation for semi-simple Lie algebras, the category of finite dimensional representations for a Lie superalgebra is in general not semi-simple, making it interesting, but more complicated to study. We will summarize some of its further features during the talk. Due to the non semi-simplicity, methods different from the ones for semi-simple Lie algebras need to be applied to describe this category. Using variations of Schur-Weyl duality, respectively the first and second fundamental theorem of invariant theory, we formulate the problem of understanding it in terms of centralizer algebras. Finally these centralizer algebras are then described via methods from categorification of quantum groups and link invariants, yielding the description of the category of finite dimensional representations for some of the classical Lie superalgebras.

Friday, January 19th, 2018

Surge 284

Talk Begins @ 2:10 p.m.

Ends @ 3:10 p.m.

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