מכון ויצמן למדע

THE WEIZMANN INSTITUTE OF SCIENCE

FACULTY OF MATHEMATICS AND COMPUTER SCIENCE

Algebraic Geometry and Representation Theory Seminar

Room 261 ,Ziskind Building
on Wednesday, Nov 19, 2014
at 11:00

Ary Shaviv
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Affine generalized root systems and symmetrizable affine Kac-Moody superalgebras

Abstract:

Correspondence between different types of Lie algebras and abstract root systems is a classical and useful tool. In the end of the 19th century E.J. Cartan and W. Killing classified real root systems and finite dimensional complex Lie algebras. They showed the correspondence between reduced root systems and these algebras. I.G. Macdonald classified affine root systems in the beginning of the 1970's. V.G. Kac later realized these systems are, in most cases, real parts of Kac-Moody algebras of affine type. V. Serganova classified generalized root systems in 1996 and showed their almost perfect correspondence to basic classical Lie superalgebras. We defined a generalization we call affine generalized root systems, and studied their correspondence to symmetrizable affine Kac-Moody superalgebras. In the talk we will define the above types of root systems, present their precise correspondences to Lie (super)algebras, and present the main points of our classification of affine generalized root systems.