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

Room 155 ,Ziskind Building  
on Thursday, Sep 13, 2018at 13:30

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**Bounded modules for finite-dimensional Lie superalgebras.**

Abstract:

Let  $\mathfrak{g}$  be a basic classical Lie superalgebra. A weight module is called bounded if the dimensions of its weight spaces are uniformly bounded. Theorems of Fernando-Futorny and Dimitrov-Matheiu-Penkov reduce the classification of irreducible bounded modules to the classification of irreducible bounded highest weight modules  $L(\lambda)$ . For Lie algebras the bounded modules  $L(\lambda)$  were classified by O. Mathieu. They exist only for the series A and C. For Lie superalgebras  $L(\lambda)$  have been classified in all cases except for five series of low-rank orthosymplectic superalgebras. Using the Enright functor, I will show how the boundness of  $L(\lambda)$  over  $\mathfrak{g}$  can be reduced to the boundness over simple Lie algebras and the orthosymplectic algebra  $\mathfrak{osp}(1|2n)$ . This work is a joint project with D. Grantcharov.