מכון ויצמן למדע

THE WEIZMANN INSTITUTE OF SCIENCE

FACULTY OF MATHEMATICS AND COMPUTER SCIENCE

Algebraic Geometry and Representation Theory Seminar

Room 1 ,Ziskind Building
on Wednesday, May 04, 2016
at 11:15

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Differential algebraic groups and their applications

Abstract:

At the most basic level, differential algebraic geometry studies solution spaces of systems of differential polynomial equations. If a matrix group is defined by a set of such equations, one arrives at the notion of a linear differential algebraic group, introduced by P. Cassidy. These groups naturally appear as Galois groups of linear differential equations with parameters. Studying linear differential algebraic groups and their representations is important for applications to finding dependencies among solutions of differential and difference equations (e.g. transcendence properties of special functions). This study makes extensive use of the representation theory of Lie algebras. Remarkably, via their Lie algebras, differential algebraic groups are related to Lie conformal algebras, defined by V. Kac. We will discuss these and other aspects of differential algebraic groups, as well as related open problems.

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