Derivations in Algebra and Geometry

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Derivations occur as natural objects in many different mathematical contexts in which they provide powerful bridges between algebra and geometry. During the last decades, the study of interactions between algebraic aspects of Lie theory and other non-commutative algebras with geometric questions related for instance to the structure of automorphism groups of affine varieties, to the rigidity and flexibility properties of complex Stein manifolds and to the classification of singularities has been a source of important progress in these areas. The algebraic theory of certain classes of derivations called locally nilpotent and locally finite derivations has many deep connections to famous challenging problems of more geometric nature in the context of affine algebraic geometry, such as the Jacobian conjecture, the 14° Hilbert's Problem, the Zariski Cancellation Problem and Linearization problems. Recent progress on the study of automorphism groups of affine varieties also shed a new light on possible interactions with infinite dimensional Lie theory. There is thus a rich and highly active field of investigation at the interface between the algebraic theory of derivations and the geometric study of algebraic varieties.

The purpose of this session is a wide dissemination of different types of problems and techniques related to the Theory of Derivations and can culminate in future research partnerships between the involved researchers and its open public at the event.

Confirmed Speakers

Alvaro Liendo (Talca University, Chile)

Charlie Petitjean (Université de Bourgogne, Dijon, France)

Gene Freudenburg (Western Michigan University, USA)

Kevin Langlois (Heinrich Heine Universität Düsseldorf, Germany)

Lucy Moser-Jauslin (Université de Bourgogne, Dijon, France)

Marcelo Oliveira Veloso (UFSJ, Ouro Branco - Brazil)

Pierre-Marie Poloni (Universität Bern, Switzerland)

Roberto Carlos Daz Vivanco (Talca University, Chile)

Sabrina Pauli (University of Oslo, Norway)

Severino Collier Coutinho (UFRJ, Rio de Janeiro - Brazil)