

# **Integration of rational derivations on algebraic varieties**

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In this talk we show a classification of rational actions of the additive and the multiplicative group on algebraic varieties that generalizes the usual description of regular actions of the additive and the multiplicative group on affine varieties in terms of derivations.

As a corollary, we provide a characterization of regular actions of the additive and the multiplicative group on the class of varieties that are proper over the spectrum of its ring of global regular functions. This class of varieties include affine varieties, complete varieties and their blowups.

Different parts of this talk are issued from joint works with L. Cid and A. Dubouloz, respectively.