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Gelfand-Kirillov dimension of modules over differential difference algebras

Gelfand-Kirillov dimension is a very useful and powerful tool for investigating noncommutative algebras and their modules. Differential difference algebras, introduced by Mansfield and Szanto in 2003, arose from the calculation of symmetries of discrete systems. In this talk, we will demonstrate how to use Gröbner-Shirshov basis theory to compute the Gelfand-Kirillov dimension of a finitely generated module over a differential difference algebra.