

Meeting: 1002, Pittsburgh, Pennsylvania, SS 9A, Special Session on Multivariate Hypergeometric Functions: Combinatorial and Algebro-Geometric Aspects

1002-14-62 **Alicia Dickenstein**, Argentina, and **Laura Felicia Matusevich** and **Timur Sadykov***
(tsadykov@uwo.ca), Department of Mathematics, Middlesex College, The University of Western Ontario, London, Ontario N6A 5B7, Canada. *Algebraic functions as solutions of holonomic systems of partial differential equations.*

Multivariate algebraic functions (defined as solutions to algebraic equations with general symbolic coefficients) are classically known to satisfy certain systems of linear partial differential equations with polynomial coefficients. In the talk we will consider a more general class of systems of differential equations. We investigate monodromy of such systems, prove them to be holonomic and their complex holomorphic solutions to have moderate growth. We also provide an explicit formula for the holonomic rank of these systems as well as bases in their spaces of complex holomorphic and Puiseux polynomial solutions. (Received August 20, 2004)