1129-35-274 **Richard Gustavson*** (rgustavson@gradcenter.cuny.edu), CUNY Graduate Center, Ph.D. Program in Mathematics, 365 Fifth Avenue, New York, NY 10016, **Alexey Ovchinnikov** (alexey.ovchinnikov@qc.cuny.edu), CUNY Queens College, Department of Mathematics, 65-30 Kissena Boulevard, Queens, NY 11367, and **Gleb Pogudin** (pogudin@algebra.uni-linz.ac.at), Johannes Kepler University, Institute for Algebra, Science Park II, 4040 Linz, Austria. *New upper bounds for differential elimination algorithms.*

Differential elimination is the process of eliminating a fixed set of differential unknowns from a system of differential equations in order to obtain consequences of the system that do not depend on that fixed set of unknowns. Decomposition algorithms approach this problem by decomposing a system of differential equations into a collection of simpler systems that can be more easily studied. In this talk, we will discuss the Rosenfeld-Gröbner algorithm for systems of partial differential equations, one of the most common decomposition algorithms, which has been implemented in computer algebra systems such as Maple. Specifically, we will address the complexity of the Rosenfeld-Gröbner algorithm by computing an upper bound for the orders of the derivatives that appear in all intermediate steps and in the output of the algorithm. (Received March 17, 2017)