1023-13-887 **Oleg Golubitsky**, **Marina Kondratieva**, **Marc Moreno Maza** and **Alexey Ovchinnikov*** (aiovchin@ncsu.edu), North Carolina State University, Department of Mathematics, Raleigh, NC 27695-8205. *Bounding Orders in Rosenfeld-Gröbner algorithm.*

We consider the Rosenfeld-Gröbner algorithm for computing a regular decomposition of a radical differential ideal generated by a set of ordinary differential polynomials in n indeterminates. For a set of ordinary differential polynomials F, let $M(F)$ be the sum of maximal orders of differential indeterminates occurring in F. We propose a modification of the Rosenfeld-Gröbner algorithm, in which for every intermediate polynomial system F, the number $M(F)$ is bounded by $(n-1)!M(G)$, where G is the initial set of generators of the radical ideal. In particular, the resulting regular systems satisfy the bound. (Received September 22, 2006)