1024-14-49 **Elena S Dimitrova*** (`edimit@clemson.edu`), O-303 Martin Hall, Clemson University, Clemson, SC 29634. *Using the Gröbner Fan of an Ideal for Polynomial Model Selection.*

Modeling methods using the Buchberger algorithm for Gröbner basis computation depend on the choice of monomial ordering on the polynomial terms. I will present two approaches to handling this computational artifact for ideals of points: (1) construction of a criterion for a particular monomial ordering selection and (2) elimination of the effect of monomial ordering by means of adding points to the variety of the ideal. Both methods are based on the computation of a combinatorial structure known as the Gröbner fan of an ideal which contains information about all monomial orderings that correspond to distinct marked reduced Gröbner bases. (Received December 13, 2006)