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*Grobner bases, monomial group actions and the Cox rings of Del Pezzo surfaces*

We introduce the notion of monomial group action and study some of its consequences for Gröbner basis theory. As an application we prove a conjecture of V. Batyrev and O. Popov describing the Cox rings of Del Pezzo surfaces (of degree  $\geq 3$ ) as quotients of a polynomial ring by an ideal generated by quadrics.

The results presented in this talk are joint work with Mike Stillman and Damiano Testa.