

1043-14-78

**Shigeru Kuroda\***, Dept. of Mathematics and Information Sciences, Tokyo Metropolitan University, 1-1 Minami-Ohsawa, Hachioji, Tokyo 192-0397, Japan. *Shestakov-Umirbaev reductions and Nagata's conjecture on a polynomial automorphism.*

In 1972, Nagata conjectured that a certain automorphism of the polynomial ring in three variables is not tame. This famous conjecture was solved by Shestakov-Umirbaev in 2003. They gave a criterion to decide whether an automorphism of the polynomial ring in three variables is tame, and concluded that Nagata's automorphism is not tame. The theory of Shestakov-Umirbaev is based on a certain inequality on the degrees of polynomials.

In this talk, we generalize the inequality of Shestakov-Umirbaev, and reconstruct their theory by using the generalized inequality. As a consequence, we give a more precise tameness criterion for polynomial automorphisms, and show that no tame automorphism of a polynomial ring admits a reduction of type IV. (Received August 18, 2008)