



复旦大学数学科学学院 数学综合报告会

报告题目: Characterizations of Toric Varieties via Polarized Endomorphisms

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摘要: Let X be a normal projective variety and $f : X \rightarrow X$ a non-isomorphic polarized endomorphism. We give two characterizations for X to be a toric variety. First we show that if X is \mathbb{Q} -factorial and G -almost homogeneous for some linear algebraic group G such that f is G -equivariant, then X is a toric variety. Next we give a geometric characterization: if X is of Fano type and smooth in codimension 2 and if there is an f -invariant reduced divisor D such that $f|_{X \setminus D}$ is quasi-étale and $KX + D$ is \mathbb{Q} -Cartier, then X admits a quasi-étale cover X' such that X' is a toric variety and f lifts to X' . In particular, if X is further assumed to be smooth, then X is a toric variety.

This is a joint work with Sheng Meng.

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