Zariski Hyperplane Section Theorem for Grassmannian Varieties

Ichiro Shimada

Abstract. Let \( \phi: X \to M \) be a morphism from a smooth irreducible complex quasi-projective variety \( X \) to a Grassmannian variety \( M \) such that the image is of dimension \( \geq 2 \). Let \( D \) be a reduced hypersurface in \( M \), and \( \gamma \) a general linear automorphism of \( M \). We show that, under a certain differential-geometric condition on \( \phi(X) \) and \( D \), the fundamental group \( \pi_1 \left( (\gamma \circ \phi)^{-1}(M \setminus D) \right) \) is isomorphic to a central extension of \( \pi_1(M \setminus D) \times \pi_1(X) \) by the cokernel of \( \pi_2(\phi): \pi_2(X) \to \pi_2(M) \). 

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