

Algebraic Geometry Seminar

A Grauert-Riemenschneider vanishing theorem for Witt canonical sheaves

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Abstract: A useful vanishing theorem for understanding characteristic zero singularities is Grauert-Riemenschneider vanishing, which asserts that if $f: Y \rightarrow X$ is a projective birational morphism and Y is smooth, then higher pushforwards of ω_Y vanish. A remarkable consequence of this result is that characteristic zero klt singularities are rational. As one could expect, this vanishing theorem fails in positive characteristic. In this talk, we will explain how to prove a Witt vector version of Grauert-Riemenschneider vanishing, and consequences on the Witt-rationality of certain singularities in positive characteristic.

Monday, October 20 at 3:00 PM in 636 SEO