

”Anti-Iitaka” theorem in characteristic $p>0$

Thursday, 26 September 2024 15:30 (1 hour)

Given a fibration of complex projective manifolds $f: X \rightarrow Y$ with general fiber F , the famous Iitaka conjecture predicts the inequality $\kappa(K_X) \geq \kappa(K_F) + \kappa(K_Y)$. Recently Chang has shown that, when the stable base locus of $-K_X$ is vertical over Y , a similar statement holds for the anticanonical divisor: $\kappa(-K_X) \leq \kappa(-K_F) + \kappa(-K_Y)$. Both Iitaka’s conjecture and Chang’s theorem are known to fail in positive characteristic. In this talk I will introduce a new class of “arithmetically general” positive characteristic varieties with negative canonical bundle, and show that Chang’s theorem can be recovered when the general fiber F belongs to this class. Based on joint work with Marta Benozzo and Chi-Kang Chang.

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