



复旦大学数学科学学院 数学综合报告会

报告题目: **Algebraic fiber spaces and curvature of Higher direct images**

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摘要: I would like to report a recent joint work with Bo Berndtsson and Mihai Paun. Let $\rho: X \rightarrow Y$ be an algebraic fiber space, and let L be a line bundle on X . We obtain a curvature formula for the higher direct images of $\Omega^i_{X/Y} \otimes L$ restricted to a suitable Zariski open subset of X . Our results are particularly meaningful in case L is semi-negatively curved on X and strictly negative or trivial on smooth fibers of ρ . Several applications are obtained, including a new proof of a result by Viehweg-Zuo in the context of canonically polarized family of maximal variation and its version for Calabi-Yau families. The main feature of our approach is that the general curvature formulas we obtain allow us to bypass the use of ramified covers and the complications which are induced by them.

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