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Minimal models and the Kodaira dimension of algebraic fiber spaces. (English) Zbl 0589.14014

J. Reine Angew. Math. 363, 1-46 (1985).

It is known that a classical problem for algebraic varieties of dimension ≥ 3 is to find their minimal models and to classify them. To this aim a good definition of minimal model seems to be the following: a minimal algebraic variety is a normal projective variety having only canonical singularities whose canonical divisor is numerically effective. Moreover such a variety is called good if its canonical divisor is semi-ample. A conjecture due to the author and Reid says that every algebraic variety X with Kodaira dimension k(X)$\geq$ 0 has a birational model which is minimal and good. - On the other hand, let $f: \quad X \to S$ be an algebraic fibre space with generic fibre X_η and let k(S)$\geq$ 0. The "Iitaka conjecture" says that $k(X) \geq k(X_\eta) + Max(k(S), Var(f))$ where Var(f) is the variation of f in the sense of birational geometry.

The author proves that the Iitaka conjecture follows from the minimal model conjecture. Moreover he studies the minimal algebraic varieties X with $k(X) = 0$.

Reviewer: L.Picco Botta

MSC:

14E30	Minimal model program (Mori theory, extremal rays)
14J30	3-folds
14J40	n-folds ($n > 4$)

Keywords:

goodness conjecture; algebraic fibre space; Iitaka conjecture; minimal model conjecture

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