

Mori, Shigefumi; Mukai, Shigeru

On Fano 3-folds with $B_2 \geq 2$. (English) [Zbl 0537.14026](#)

Algebraic varieties and analytic varieties, Proc. Symp., Tokyo 1981, Adv. Stud. Pure Math. 1, 101-129 (1983).

[For the entire collection see [Zbl 0504.00008](#).]

This paper contains a clear exposition of a method for the classification of Fano threefolds X with $B_2(X) \geq 2$ and states, in particular, the following result: $B_2(X) \leq 10$ and there are 87 types of Fano threefolds with $B_2(X) \geq 2$, up to deformations. The complete classification can be found in a paper of the authors [Manuscr. Math. 36, 147-162 (1981; [Zbl 0478.14033](#))]. - Such a method is essentially based on the following tools: (i) extremal rays, according to Mori's theory; (ii) blowing up of Fano threefolds; (iii) conic bundles; (iv) Sokurov's results on the family of lines contained in the anticanonical model of a Fano threefold.

For the classification of Fano threefolds with $B_2 = 1$ see: *V. A. Iskovskih*, Math. USSR, Izv. 12, 469-506 (1978); translation from Izv. Akad. Nauk SSSR, Ser. Mat. 42, 506-549 (1978; [Zbl 0407.14016](#)).

Reviewer: [L. Picco Botta](#)

MSC:

[14J30](#) 3-folds

Cited in **4** Reviews
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Keywords:

[second Betti numbers not less than two](#); [Fano threefolds](#)