

**Campana, Frédéric**

**Orbifolds with trivial first Chern class. (Orbifolds à première classe de Chern nulle.)**

(English) [Zbl 1068.53051](#)

Collino, Alberto (ed.) et al., The Fano conference. Papers of the conference organized to commemorate the 50th anniversary of the death of Gino Fano (1871–1952), Torino, Italy, September 29–October 5, 2002. Torino: Università di Torino, Dipartimento di Matematica. 339-351 (2004).

The author obtains an orbifold version of Bogomolov's decomposition theorem for compact Kähler manifolds with trivial first Chern class. The orbifolds studied by the author are Satake  $V$ -manifolds. The proof is a direct extension of the proof in the smooth case, obtained by using Ricci flat Kähler metrics, Cheeger-Gromoll splitting theorem and the de Rham decomposition theorem. In the case of normal  $K3$  surfaces, one obtains that the fundamental group of their smooth locus is either finite or an extension of  $\mathbb{Z}^{\oplus 4}$  by a finite group. In this case the  $K3$  surface is uniformised by a complex torus of dimension 2.

For the entire collection see [\[Zbl 1051.00013\]](#).

Reviewer: [Vasile Oproiu \(Iași\)](#)

**MSC:**

- [53C56](#) Other complex differential geometry
- [58A40](#) Differential spaces
- [14J28](#)  $K3$  surfaces and Enriques surfaces
- [14A20](#) Generalizations (algebraic spaces, stacks)

Cited in **2** Reviews  
Cited in **8** Documents

**Keywords:**

[orbifolds](#); [Kählerian orbifolds](#); [normal  \$K3\$  surfaces](#)