



Title	3 surfaces and log del Pezzo surfaces of index three
Author(s)	Ohashi, Hisanori; Taki, Shingo
Citation	代数幾何学シンポジウム記録 (2013), 2010: 119-119
Issue Date	2013-02
URL	http://hdl.handle.net/2433/214920
Right	
Туре	Departmental Bulletin Paper
Textversion	publisher

代数幾何学シンポジウム記録

2010年度 pp.119 119 K3 surfaces and log del Pezzo surfaces of index three

Hisanori Ohashi (Research Institute for Mathematical Sciences)

and Shingo Taki (Korea Institute for Advanced Study)



- k = 1: classical result
- k = 2: Alexeev and Nikulin, Nakayama

Generalize the idea of [AN] to the k = 3 case!

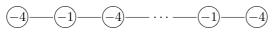
- Review of [AN] (k = 2 case) -

- Smooth Divisor Theorem $\exists C \in |-2K_Z|$ s.t. C: smooth curve and $C \not\ni$ singularities.
- Right resolution

In general, we get the following dual graph by the minimal resolution.



 \uparrow : blow up at all intersection points



• Classification of non-symplectic involutions on K3 surfaces by Nikulin

We get a correspondence between K3 surfaces with a non-symplectic involution and log del Pezzo surfaces of index 2.

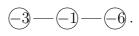
Example

- Main Theorem (k = 3 case)

There exists a correspondence between K3surfaces with a non-symplectic automorphisms of order 3 and log del Pezzo surfaces of index 3.

- Multiple Smooth Divisor Property $\exists 2C \in |-3K_Z|$ s.t. C : smooth curve and $C \not\ni$ singularities.
- Right resolution

It is a successive union of the unit chain



• Classification of non-symplectic automorphisms of order 3 on K3 surfaces by Artebani and Sarti, Taki (independently)

88888

There exists a log del Pezzo surface of index 3 which does not satisfy MSDP. (ex. $\mathbb{P}(1, 1, 3)$) Thus the observation does not give the complete classification.

