

ALGEBRA
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Cohomology of hyperkahler manifolds

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Abstract: Hyperkahler manifolds are Riemannian manifolds with three complex structures satisfying quaternionic relations and kahler. There are known just few of them with maximal holonomy and being compact starting from K3. But existence of new examples and explicit structure of cohomology remain open. In this talk I will speak about cohomology of hyperkahler manifolds, Verbitsky, Loojenga and Lunts have proved that Lie algebra $so(4, b_2 - 2)$ acts on cohomology. Using it we can prove that the second Betti number is bounded and that all cohomology of hyperkahler manifold X can be embedded into the cohomology of the product of several copies of abelian variety A , what generalize classical Kuga-Satake construction.

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