

CASTS Algebraic Geometry Summer Program

Derived equivalence of K3 surfaces

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103, Mathematics Research Center Building (ori. New Math. Bldg.)

In this talk, we will give a cohomological criterion that decides when two K3 surfaces have equivalent derived categories by studying the Hodge isometry of the integral cohomology. This result can be seen as a generalization of the global Torelli theorem, which asserts that two K3 surfaces are isomorphic if and only if there exists a Hodge isometry. Moreover, we will see that the Hodge isometry is nearly given by the induced cohomological Fourier-Mukai transform for some equivalence between the derived categories.



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