

Northeastern University



Mathematics Department

Geometry, Physics, and Representation Theory Seminar

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Thursday, April 25, **2:50-3:50 pm**, Lake Hall 509

**The Hodge conjecture for the generic abelian fourfold  
of Weil type with discriminant 1**

**Abstract**

A generalized Kummer variety of dimension  $2n$  is the fiber of the Albanese map from the Hilbert scheme of  $n+1$  points on an abelian surface to the surface. We compute the monodromy group of a generalized Kummer variety via equivalences of derived categories of abelian surfaces. As an application we prove the Hodge conjecture for the generic abelian fourfold of Weil type with complex multiplication by an arbitrary imaginary quadratic number field  $K$ , but with trivial discriminant invariant. The latter result is inspired by a recent observation of O'Grady that the third intermediate Jacobians of smooth projective varieties of generalized Kummer deformation type form complete families of abelian fourfolds of Weil type.