

Geometry, Physics, and Representation Theory  
Northeastern University

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## **The birational Torelli problem for Calabi-Yau 3-folds.**

### **Abstract**

The intersection of two general  $PGL(10)$ -translates of the Grassmannian  $Gr(2, 5)$  is a Calabi-Yau 3-fold  $X$ , and the intersection of the projective duals of the two translates is another Calabi-Yau 3-fold  $Y$ . We show that  $X$  and  $Y$  provide counterexamples to a certain birational Torelli problem for Calabi-Yau 3-folds, namely, they are deformation equivalent, derived equivalent, and have isomorphic Hodge structures, but they are not birational. This is joint work with Jrgen Vold Rennemo.