

## Anthony Várilly-Alvarado: Kodaira Dimension of certain orthogonal modular varieties

In 2007 Gritsenko, Hulek, and Sankaran showed that the coarse moduli space  $K_d$  of K3 surfaces of degree  $d$  is of general type as soon as  $d$  is at least 124. They did this by constructing enough pluricanonical forms out of a single special modular form for a group associated to the space  $K_d$ , by leveraging work of Borcherds. In this talk I will review the circle of ideas behind their proof, and explain how one can use these ideas to show that certain moduli spaces parametrizing cubic fourfolds that contain more surfaces than one might expect are also of general type (joint with Sho Tanimoto). I will explain connections of this result to the arithmetic of K3 surfaces over number fields.