

Hokuto Uehara (Tokyo Metropolitan University)

***Autoequivalences of derived categories on elliptic surfaces with non-zero Kodaira dimensions***

**Abstract:**

We study the groups of autoequivalences of the derived categories of coherent sheaves on smooth projective elliptic surfaces with non-zero Kodaira dimensions. We find generators of "nonreducible" part of it.

Giovanni Mongardi (Università degli Studi di Milano)

***Ample cone and negative divisors on symplectic manifolds***

**Abstract:**

For K3 surfaces, the ample cone is cut out by rational curves of selfintersection  $-2$ . In the more general case of irreducible symplectic manifolds, a similar result can be phrased using certain divisors whose top self intersection is negative. This can be made fully explicit for Hilbert schemes of points on K3s and generalised Kummer manifolds.

Andreas Knutsen (University of Bergen)

***Curves with  $A_k$ -singularities on K3 surfaces***

**Abstract:**

Let  $(S, H)$  be a general primitively polarized K3 surface. I will talk about a joint work with Concettina Galati, where we prove the existence of curves in the complete linear system  $|nH|$  with  $A_k$ -singularities and living in families of the "expected dimension". This generalizes results in the nodal case of Mumford for  $n=1$  and Chen for  $n>1$ . The proof is by degenerating the K3 surface to a union of rational normal scrolls and deform a higher order tacnode on a curve on the degerated surface.