

POSITIVITIES OF VARIETIES
WITH MAXIMAL ALBANESE DIMENSION
30.06.2015

Given a variety of maximal Albanese dimension, there is a generically finite morphism to its Albanese variety. It is known that its Euler characteristic is non-negative. It is tempting to characterize varieties with vanishing Euler characteristic.

Inspired by the Fourier–Mukai transform, one can have some weaker notion of positivity of sheaves, such as M -regular or Generic Vanishing. Studying the push-forward of canonical sheaf, one can encode various geometric properties of the variety in question by the cohomological properties of the canonical sheaf. In recent joint work with O. Debarre and Z. Jiang, we obtained some characterization, for example in dimension three. We explain this work in the talk.