On K-equivalences between smooth projective varieties

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Abstract

The K-equivalence is a concept arising from the birational geometry. Notably, different minimal models in a birational class are K-equivalent. There are conjecturally strong geometric relations between birational minimal models. Y. Kawamata has proven that two such minimal models are related to each other by a chain of flops. It amounts therefore to studying invariants under flops.

I will be talking about the comparison of the Chow motive of smooth varieties that are related by a flop under the hypothesis that the contracting maps are semi-small in the sense of Goresky-MacPherson. We make use of the explicit decomposition theorem of perverse sheaves and then, with the help of arc spaces, we compare those local systems that extend to an intersection complex appearing in the decompositions.

The method was inspired by works of M. A. A. de Cataldo and L. Migliorini on semi-small maps and motivic decompositions.