Friedlander, Eric M.
Relative Chow correspondences and the Griffiths groups. (English) Zbl 0960.14005

Using the filtration on algebraic cycles on a (complex) projective variety (called topological filtration) defined with the help of a fundamental operation on the homotopy groups of cycles spaces, the author gives examples in which specific levels of this filtration are non-trivial. After a brief summary of the context and results of M. V. Nori's paper [Invent. Math. 111, No. 2, 349-373 (1993; Zbl 0822.14008)] the author extends the construction of Chow correspondences and the graph mappings to quasi-projective varieties. He interprets the Chow correspondence homomorphism in terms of slant product. The most important result, theorem 3.4, is a strengthened version of one aspect of Nori's theorems about the Griffiths group. As an immediate corollary of this result the author obtains examples of varieties in which the topological filtration has several non-trivial associated graded pieces of specified level. In order to be able to apply the Nori-Lefschetz theorem, the author develops some aspects of Chow correspondences and correspondence homomorphisms relative to a fixed base. So, he interprets in terms of relative Chow correspondences the condition that each member of a family of cycles belongs to a given level of the topological filtration.

Reviewer: Corina Mohorianu (Iaşi)

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References:


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