Interior motive of certain singular varieties

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Grothendieck and his school developed a satisfactory theory of motives associated to proper smooth varieties over a field. These are called Chow motives.

Thanks to the work of Voevodsky and others, we nowadays have a theory at our disposal, which extends Grothendieck's approach to arbitrary (non-proper or/and non-smooth) varieties. One may ask whether Chow motives can be characterized as being those objects in Voevodsky's category, which are "pure" in a certain sense (namely, that of their realization in a Weil cohomology theory).

The object of this talk is to construct motives la Voevodsky, whose realization equals intersection cohomology of varieties with isolated singularities. We shall see that already in the case of surfaces, the problem of constructing these motives as Chow motives, is equivalent to classical results about resolution of singularities.