1167-18-101Inna I Zakharevich* (zakh@math.cornell.edu). Dehn invariants for algebraic
K-theory. Preliminary report.

The Dehn invariant for Euclidean polyhedra is a scissors congruence invariant which assigns to each polyhedron the measure of its "2-dimensional angles." In a paper from 2008, Cathelineau describes this invariant algebraically using flags of subspaces. At first glance it would appear that it should therefore be possible to extend this invariant to the algebraic K-theory of a field, as algebraic K-theory of a field is "built out" of flags of subspaces. Unfortunately, this does not immediately work: one of the key inputs to Cathelineau's machinery is a quadratic form, which assigns to each subspace a canonical orthogonal complement. Without this form the complement of a subspace is not unique, and therefore Cathelineau's machinery does not work. However, the recent discovery of CGW-categories has produced a new model of the algebraic K-theory of a field which includes the data of subspaces and their complements. In this talk we will discuss the new model and describe the resulting Dehn invariants.

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