CUT-AND-PASTE INVARIANTS OF MANIFOLDS VIA ALGEBRAIC K-THEORY

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Recent work of Zakharevich and Campbell has focused on developing the K-theoretic machinery to study scissors congruence problems and applying these tools to the Grothendieck ring of varieties. In this talk we will discuss a new application of their framework to study the so called cut-and-paste invariants of manifolds. Namely, we will describe a K-theory spectrum, which recovers the classical groups SK_n ("schneiden und kleben" is German for "cut and paste") as its zeroth homotopy group. We will also explain how the Euler characteristic, which is an example of a cut-and-paste invariant, fits into this new setup. Further we will describe the connection of our spectrum to the classical Madsen-Tillmann spectrum $MTSO(n)$. This is joint work with R. Hoekzema, M. Merling, L. Murray, and C. Rovi.

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