

Hyperplane-essential actions and taco moves

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Abstract: Various well-known facts, for example Stallings' ends theorem and the Nielsen realisation theorem for $Out(F_n)$, boil down to passing from a cubulation of a group to a splitting. I will make this interpretation precise, and also explain how some open problems are reducible to more general statements about passing from actions on cube complexes to actions on trees. These questions include the Kropholler-Roller conjecture and the question of finding a Nielsen realisation theorem for outer automorphism groups of as wide a class of right-angled Artin groups as possible. There is a general procedure, called "panel collapse", for passing from a cubulation of a group G to a "lower-complexity" one. The talk will outline this construction, explain how to recover the two theorems mentioned above from the construction, and discuss the extra challenges posed by the above two open problems. This talk is on some joint work with Nicholas Touikan, and on some joint work with Henry Wilton.