Stable torsion length

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Abstract: Many interesting groups are generated by torsion elements, for instance, mapping class groups, SL(n,Z) and Homeo^+(S^1). The word length with respect to this typically infinite generating set is called the torsion length. That is, the torsion length tl(g) of an element g is the smallest k such that g is the product of k torsion elements. The stable torsion length stl(g) is the limit of tl(g^n)/n, which measures the growth of the torsion length. I will explain how this is related to the stable commutator length and how to use topological methods to compute stl(g) in free products of finite abelian groups. The nature of the method implies that stl(g) is always rational in these free products. This is joint work with Chloe Avery.