1147-11-222 **J Tsimerman*** (jacobt@math.toronto.edu). Bound 5-torsion in class groups using Elliptic Curves.

We discuss a new method to bound 5-torsion in class groups using elliptic curves. The most natural "trivial" bound on the n-torsion is to bound it by the size of the entire class group, for which one has a global class number formula. We explain how to make sense of the n-torsion of a class group intrinsically as a "dimension 0 selmer group", and by embedding it into an appropriate Elliptic curve we can bound its size by the Tate-Shafarevich group which we can bound using the BSD conjecture. This fits into a general paradigm where one bounds "dimension 0 selmer groups" by embedding into global objects, and using class number formulas. This is joint work with Arul Shankar. (Received January 11, 2019)