1077-52-945 **Olivia Beckwith**, **Matthew Grimm** and **Jenya Soprunova*** (soprunova@math.kent.edu), Summit st., Mathematical Sciences Building, Kent, OH 44242, and **Bradley Weaver**. *Minkowski length of 2D and 3D lattice polytopes.* Preliminary report.

The Minkowski sum of two polytopes is the set of all pairwise sums of their points. The central object of my talk is the Minkowski length $L(P)$ of a lattice polytope P which is defined to be the largest number of primitive lattice segments whose Minkowski sum is in P.

The Minkowski length represents the largest possible number of factors in a factorization of polynomials with exponent vectors in P and comes up in lower bounds for the minimum distance of toric codes. I will explain some combinatorial results about $L(P)$ where P is a 2D or 3D lattice polytope in connection with 2D and 3D toric codes. (Received September 14, 2011)