1152-05-225 **Lei Xue*** (lxue@uw.edu), UW Department of Mathematics, Box 354350, C-138 Padelford, Seattle, WA 98195-4350, and **Connor Sawaske**, UW Department of Mathematics, Box 354350, C-138 Padelford, Seattle, WA 98195-4350. *Generalized Dehn-Sommerville Relations.* Preliminary report.

The classical Dehn-Sommerville relations assert that the h-vector of any Eulerian simplicial complex is symmetric. The toric h-vector, introduced by Stanley, is defined for graded posets with the minimal and maximal elements. In the case when a poset is the face lattice of a simplicial complex, the toric h-vector recovers to usual simplicial h-vector. Stanley proved that the toric h-vector of an Eulerian poset is also symmetric. This result was generalized by Swartz to toric h-vector of semi-Eulerian posets.

In this talk we discuss two further generalizations of the Dehn-Sommerville relations: one for the h-vector of a (non-Eulerian) pure simplicial complex, and one for the toric h-vector of a graded poset with restricted singularities. (Received September 04, 2019)