Abstract:

The flow polytope associated to an acyclic graph is the set of all nonnegative flows on the edges of the graph with a fixed netflow at each vertex. We will first discuss a family of dissections of certain flow polytopes and an invariant of these different dissections. We will then explain how this invariant leads to a family of Schubert and Grothendieck polynomials. We fill finish by showing how this connection implies interesting results about the Newton polytopes of Schubert and Grothendieck polynomials.