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Elizabeth Drellich*, edrellich@haverford.edu. *On the structure of Hessenberg varieties.*

Hessenberg varieties have become a powerful tool for tackling combinatorial problems, but Hessenberg varieties themselves are also intriguing combinatorial objects. A Hessenberg variety is a collection of full flags determined by an element X in the Lie algebra \mathfrak{g} and a Hessenberg space H which is an upper order ideal in the root decomposition of \mathfrak{g} . By fixing X but varying H , the Hessenberg varieties form a poset of algebraic varieties, ordered by containment. The analogous poset for Schubert varieties is isomorphic to the Bruhat order, but for Hessenberg varieties, the containment poset is a coarsening of the poset of upper order ideals. This talk will discuss recent results about the structure of these posets of Hessenberg varieties, particularly for Hessenberg spaces that do not contain the Borel. (Received September 09, 2019)