

February 19: David Vogan (MIT), *Bruhat order on representations of K* .

Suppose G is a complex connected reductive algebraic group. The set $X^*(H)^+$ of dominant weights for a maximal torus is a combinatorially easy set that appears in many ways in representation theory and geometry. There is a natural partial order on $X^*(H)^+$, the *Bruhat order*, which has interesting meanings in many of these applications; understanding this order is a powerful tool.

If θ is an involutive automorphism of G with fixed point group $K = G^\theta$, then the set \widehat{K} (of irreducible algebraic representations of K) is a generalization of $X^*(H)^+$ playing a similar role in the infinite-dimensional representation theory of real groups. I'll explain a *Bruhat order* on \widehat{K} . We understand this order much less well than the order on dominant weights. The purpose of this talk is to urge you to repair that lack of understanding.