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*A new partial order on a finite reflection group*

I will discuss a new partial order on a finite reflection group  $W$  which has recently been studied by Drew Armstrong, based on a construction due to Nathan Reading which initially appeared in connection with the combinatorics of cluster algebras. This order (which depends on a choice of Coxeter element for  $W$ ) is stronger than weak order, but weaker than Bruhat order. Like weak order, this order can be defined by associating to any  $w \in W$  a set of positive roots and then considering the inclusion order on those sets, but the sets of positive roots that appear are not generally inversion sets and do not seem to have been studied before. I will present some results describing these sets of positive roots, using the theory of quiver representations.

This is joint work with Drew Armstrong (University of Minnesota).