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Diameters of Graphs of Reduced Words of Permutations

It is a classical result that any permutation in the symmetric group can be generated by a sequence of adjacent transpositions. The sequences of minimal length are called reduced words. The graphs of these reduced words, with edges determined by relations in the underlying Coxeter group, have been well studied. Recently, the diameter has been calculated for the longest permutation $n \cdots 21$ by Reiner and Roichman as well as Assaf. In this talk we present our results on diameters for certain classes of permutations. We also make progress on conjectured bounds of the diameter by Reiner and Roichman, which are based on the underlying hyperplane arrangement.