Maximal length elements in a conjugacy class of a symmetric group S_n – Revisited.

Sungsoon Kim

Université de Picardie Jules Verne, France
kim@math.univ-paris-diderot.fr

Abstract: Given a conjugacy class of a symmetric group S_n, we know that any irreducible character of a Hecke algebra of the symmetric group takes the same value on two basic elements T_w and $T_{w'}$ whenever w and w' are both minimal length elements in the given conjugacy class of S_n.

In order to generalize these properties to the Hecke algebra extended by the graph automorphism F of S_n, i.e. $F(s_i) = s_{n-i}$ the conjugation by the maximal length element w_0 in S_n, we must study the minimal length elements in a given F-conjugacy class. These minimal length elements correspond to the maximal length elements in an ordinary conjugacy class of S_n.

In this talk, we present an algorithm which allow us, from an arbitrary permutation σ of S_n to obtain an element of maximal length in the same conjugacy class of σ.