Lusztig, George
On some partitions of a flag manifold. (English) Zbl 1220.20042

From the introduction: Let $G$ be a connected reductive group over an algebraically closed field $k$ of characteristic $p \geq 0$. Let $W$ be the Weyl group of $G$. Let $\overline{W}$ be the set of conjugacy classes in $W$. The main purpose of this paper is to give a (partly conjectural) definition of a surjective map from $\overline{W}$ to the set of unipotent classes in $G$ (see 1.2(b)). When $p = 0$, a map in the opposite direction was defined in [D. Kazhdan and G. Lusztig, Isr. J. Math. 62, No. 2-3, 129-168 (1988; Zbl 0658.22005), 9.1] and we expect that it is a one sided inverse of the map in the present paper. The (conjectural) definition of our map is based on the study of certain subvarieties $B^w_g$ (see below) of the flag manifold $B$ of $G$ indexed by a unipotent element $g \in G$ and an element $w \in \overline{W}$.

MSC:

20G05 Representation theory for linear algebraic groups
14L30 Group actions on varieties or schemes (quotients)

Keywords:
connected reductive groups; Weyl groups; flag manifolds; unipotent classes

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