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Julianne G. Rainbolt* (rainbolt@slu.edu). *Intersections of Bruhat cells with conjugacy classes of regular elements.* Preliminary report.

Let \tilde{G} denote a connected reductive algebraic group defined over an algebraically closed field of characteristic p . Let $F : \tilde{G} \rightarrow \tilde{G}$ be a Frobenius map. Let G be the finite group of Lie type which is the fixed points of F . Let B be an F -stable Borel subgroup of \tilde{G} and let T be an F -stable maximal torus of \tilde{G} contained in B . Let $N = N_{\tilde{G}}(T)$. Denote the Weyl group of G by $W = N^F/T^F$. The element \dot{w} will denote the preimage of $w \in W$ with respect to the natural surjection from N^F to W . The double cosets $B^F \dot{w} B^F$ are called the Bruhat cells of G . An element $x \in \tilde{G}$ is called regular if the dimension of its centralizer is minimal. In this talk we will investigate the intersections of Bruhat cells with conjugacy classes of regular elements in G . (Received January 18, 2012)