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**Bhama Srinivasan** and **C. Ryan Vinroot\*** (vinroot@math.wm.edu). *Galois group action on Lusztig parameters.*

Consider a connected reductive group  $\mathbf{G}$  with connected center, defined over the algebraic closure of a finite field, and let  $F$  be a Frobenius map on  $\mathbf{G}$  with  $G = \mathbf{G}^F$  the finite group of rational points. If  $\chi$  is an irreducible complex character of  $G$ , we study the action on  $\chi$  by an element of the absolute Galois group  $\text{Gal}(\overline{\mathbb{Q}}/\mathbb{Q})$  on the character values of  $\chi$ . In particular, if  $\chi$  is described by Lusztig parameters (or Jordan decomposition), then we give the Lusztig parameters of the image of  $\chi$  under the Galois action. As a result, we obtain a criterion for  $\chi$  to be rational-valued. We will also discuss recent developments on similar results in some cases when the center of  $\mathbf{G}$  is disconnected, which is joint work with Mandi Schaeffer Fry and Stephen Trefethen. (Received September 13, 2019)