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Gabriel Navarro, **Noelia Rizo** and **Mandi A. Schaeffer Fry*** (aschaef6@msudenver.edu),
Denver, CO 80217, and **Carolina Vallejo**. *Galois action on the principal block and generation of
Sylow subgroups.*

We show that the character table (in fact, we only require the principal block) of a finite group G determines certain generation properties of a Sylow subgroup, in terms of the Galois action on characters. Specifically, in joint work with Noelia Rizo and Carolina Vallejo, we show that one can determine from the principal block whether a Sylow 2- or 3-subgroup of G is cyclic. With Gabriel Navarro, Noelia Rizo, and Carolina Vallejo, we additionally show that one can determine whether a Sylow 2-subgroup is generated by two elements. Our proofs of these results require the use of the Classification of Finite Simple Groups and provide evidence for the so-far elusive Alperin–McKay–Navarro conjecture. (Received August 09, 2020)