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Scott Larson* (scott.larson@uga.edu), 160 Pine Ridge Trace, Athens, GA 30605. *Small Resolutions of Closures of K -Orbits in Flag Varieties.*

Let G be a connected complex reductive algebraic group and K the fixed points of an algebraic involution. The geometry of closures of K -orbits on the flag variety of G governs key properties in the representation theory of a corresponding real reductive group. We recall results from Barbasch-Evens on resolutions of singularities of K -orbit closures for the group $U(p, q)$. The group $Sp(2n, R)$ admits similar but more complicated resolutions, and we provide families of small resolutions in this case. We conclude with a general construction of resolutions of K -orbits. (Received August 30, 2020)