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A Gauss-Bonnet theorem for constructible sheaves on reductive groups

We prove an analog of the Gauss-Bonnet formula for constructible sheaves on reductive groups. This formula holds for all constructible sheaves equivariant under the adjoint action and expresses the Euler characteristic of a sheaf in terms of its characteristic cycle. As a corollary from this formula we get that if a perverse sheaf on a reductive group is equivariant under the adjoint action, then its Euler characteristic is nonnegative.