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*The dual of a reductive algebraic group*

Let  $k$  be a field, and  $G$  a connected reductive  $k$ -group. If either  $k$  or the absolute root system of  $G$  satisfies certain conditions, then we construct a connected reductive  $k$ -group  $G^*$  that is dual to  $G$  in a precise sense. For example, the absolute root data of  $G$  and  $G^*$  are dual to each other, and once a single choice has been made, there is a natural bijection between the set of stable conjugacy classes of maximal  $k$ -tori in  $G$  and the set of those in  $G^*$ .