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George J. McNinch* (mcninchg@member.ams.org), Department of Mathematics, Tufts University, 503 Boston Ave, Medford, MA 02155. *The centralizer of a nilpotent section.*

Let F be a separably closed field and let G be a semisimple F -algebraic group for which the characteristic of F is *very good*. If $X \in \text{Lie}(G)(F)$ is a nilpotent element in the Lie algebra of G , and if C is the centralizer in G of X , we show that (i) the root datum of a Levi factor of C , and (ii) the component group C/C° both depend only on the Bala-Carter label of X ; i.e. both are independent of very good characteristic. The result in case (ii) depends on the known case when G is (simple and) of adjoint type.

The proofs are achieved by studying the centralizer \mathcal{C} of a nilpotent section X in the Lie algebra of a suitable semisimple group scheme over a Noetherian, normal, local ring \mathcal{A} . When the centralizer of X is equidimensional on $\text{Spec}(\mathcal{A})$, a crucial result is that locally in the étale topology there is a smooth \mathcal{A} -subgroup scheme L of \mathcal{C} such that L_t is a Levi factor of \mathcal{C}_t for each $t \in \text{Spec}(\mathcal{A})$.

The talk will give an overview of the argument. (Received September 25, 2006)