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Steven Glenn Jackson (jackson@math.umb.edu) and **Alfred G. Noël***
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Morrissey boulevard, Boston, MA 02125-3393. *Nilpotent Orbits Associated to Coxeter Cells.*

Let \mathfrak{g} be a complex reductive Lie group with adjoint group G and Weyl group W . This paper describes a simple algorithm by which one can read off the complex nilpotent orbit associated with a cell representation of W —provided that W is of classical type.

The τ -signature of a cell representation \mathcal{C} coincides with that of its unique special subrepresentation, and also with the collection of all parabolics \mathcal{P} such that the simple roots of \mathcal{P} are contained in some τ -invariant of the cell. Combining this with the Springer correspondence, we obtain a simple method which computes the nilpotent orbit associated with the cell directly from the τ -invariants.

In principle, these algorithms could be implemented as a package of the *Atlas of Lie groups and representations* software developed by Fokko du Cloux and Marc van Leeuwen. Several examples will be given using this software. (Received August 25, 2008)