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Eric Sommers* (esommers@math.umass.edu), Department of Mathematics and Statistics, University of Massachusetts, LGRT, Amherst, MA 01003. *Exterior powers of the reflection representation in Springer theory.*

We will discuss the structure of the W -invariants in $H^*(\mathcal{B}_e) \otimes \wedge^*V$, where \mathcal{B}_e is the Springer fiber over the nilpotent element e in a simple Lie algebra \mathfrak{g} . Here, W is the Weyl group acting on the cohomology of the fiber via Springer theory and V is the reflection representation of W . This is closely related to a conjecture of Lehrer and Shoji when e is regular in a Levi subalgebra. This conjecture was proved by Henderson in types A, B, C .

We establish the Lehrer-Shoji conjecture in the remaining types (and discuss and prove an extension of the conjecture to all e). We will also discuss a connection to rational Cherednik algebras, which leads to a graded decomposition of the representation of W on L/tL , where L is the coroot lattice and t is a natural number prime to the Coxeter number h . (Received August 05, 2010)