1031-55-33   **Tara S. Holm** and **Reyer Sjamaar*** (`sjamaar@math.cornell.edu`), Department of
Mathematics, Malott Hall, Cornell University, Ithaca, NY 14853-4201. *Torsion and abelianization
in equivariant cohomology and equivariant Chow theory.*

Let X be a topological space upon which a compact connected Lie group G acts. It is well-known that the equivariant cohomology $H_G^*(X, \mathbf{Q})$ is isomorphic to the subalgebra of Weyl group invariants of the equivariant cohomology $H_T^*(X, \mathbf{Q})$, where T is a maximal torus of G. This relationship may fail for coefficient rings $\mathbf{k}$ other than $\mathbf{Q}$. We prove that under a mild condition on $\mathbf{k}$ the algebra $H_G^*(X, \mathbf{k})$ is isomorphic to the subalgebra of $H_T^*(X, \mathbf{k})$ annihilated by the divided difference operators. We also obtain a version of this result for the equivariant intersection theory of algebraic schemes acted upon by linear algebraic groups. (Received July 24, 2007)

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