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**Peter Crooks\***, peter.crooks@utoronto.ca. *Generalized Equivariant Cohomology and Stratifications.*

In the 1980s, Atiyah and Bott provided a framework for computing equivariant cohomology in the context of an equivariant stratification. Their approach has given rise to several important developments in the research literature. Notably, Harada, Henriques, and Holm used equivariant stratifications to formulate a version of GKM Theory for generalized equivariant cohomology.

I will begin with a brief overview of generalized  $T$ -equivariant cohomology theories  $E_T^*$ , where  $T$  is a compact torus. I will then discuss some recent work concerning the  $E_T^*(\text{pt})$ -module structure of  $E_T^*(X)$ , where  $X$  is an equivariantly stratified smooth complex projective  $T_{\mathbb{C}}$ -variety. We will subsequently assume that  $X^T$  is finite and that  $E_T^*$  is one of  $T$ -equivariant cohomology,  $T$ -equivariant K-theory, and  $T$ -equivariant complex cobordism. In this case, a Białyński-Birula stratification gives an extremely explicit  $E_T^*(\text{pt})$ -module structure. Lastly, I will show how the preceding ideas can be used to provide a relatively straightforward calculation of the generalized torus-equivariant cohomology of the affine Grassmannian of a simply-connected complex semisimple Lie group.

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