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**Julianna Tymoczko\*** (jtymoczko@smith.edu), Department of Mathematics and Statistics,  
Smith College, Northampton, MA 01063. *Using graph theory to construct the equivariant  
cohomology of certain affine Springer fibers.*

We can compute the equivariant cohomology of a large family of algebraic varieties from an algebraic construction on a combinatorial graph. Geometers and topologists often refer to this construction as GKM theory (after Goresky-Kottwitz-MacPherson); in analysis and applied math, the basic construction is called a spline. We give a very brief overview of the combinatorial construction and then show how to construct the equivariant cohomology of an infinite variety that is a particular affine Springer fiber. (Received July 19, 2016)