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Martha E. Precup* (martha.precup@wustl.edu) and **Megumi Harada**. *Hessenberg varieties and the Stanley–Stembridge conjecture.*

In 2015, Brosnan and Chow, and independently Guay-Paquet, proved the Shareshian–Wachs conjecture, which links the Stanley–Stembridge conjecture in combinatorics to the geometry of Hessenberg varieties through Tymoczko’s permutation group action on the cohomology ring of regular semisimple Hessenberg varieties. This talk will give a brief overview of that story and present a new set of linear relations satisfied by the multiplicities of certain permutation representations in Tymoczko’s representation. As an application of these results, we prove an inductive formula for the multiplicity coefficients corresponding to partitions with a maximal number of parts. (Received January 26, 2019)