Regular semisimple Hessenberg varieties whose cohomology rings are generated by elements of degree 2

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Regular semisimple Hessenberg varieties are an important class of subvarieties of a flag manifold, which include permutohedral varieties. We give an explicit description of the cohomology ring of a regular semisimple Hessenberg variety when it is generated by elements of degree 2, and give a monomial basis of its cohomology in some easy cases. This is a joint work with Anton Ayzenberg and Mikiya Masuda.