1046-13-20 **Marshall Hampton*** (`mhampton@d.umn.edu`), SCC 140, UMD, 1117 University Dr., Duluth, MN 55812. *Solutions, bounds, and finiteness of polynomial systems in Sage.*

Systems of polynomial equations can be studied with many tools, both symbolic and numerical, such as Groebner bases, resultants, numerical homotopy continuation methods, and tropical geometry/BKK theory. Sage provides a unified platform for all of these computations by integrating packages such as Singular, Gfan, PHCpack, and cddlib (among many others). I will provide an overview of how these tools can be combined through example systems from the n-body and n-vortex problems. (Received May 25, 2008)