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Nickolas Hein* (nhein@math.tamu.edu), Department of Mathematics, Texas A&M University, College Station, TX 77843, and **Jonathan Hauenstein**, **Abraham Martin del Campo** and **Frank Sottile**. *Eremanko-Gabrielov lower bounds beyond the Shapiro Conjecture*. Preliminary report.

The Shapiro Conjecture (now theorem of Muhkin, Tarasov, and Varchenko) asserts that an intersection of Schubert varieties has all points real if it is given by flags osculating a rational normal curve at real points. Eremanko and Gabrielov studied a weaker form of this, restricting to hypersurface Schubert varieties, but allowing the flags to osculate at complex points so that the intersection remains a real variety (that is, the osculating flags come in complex conjugate pairs). They proved a lower bound on the number of real points in such an intersection, independent of the number of complex conjugate pairs.

In this talk, I will give a brief exposition of this history and describe a computational project investigating these lower bounds of Eremanko-Gabrielov type for general intersections of Schubert varieties. We typically find lower bounds that depend upon the numbers of conjugate pairs of flags. Our data also suggest that the lower bounds of Eremanko and Gabrielov are not the best possible, and for some problems we observe interesting congruences modulo 4 for the numbers of real solutions. (Received August 30, 2011)