

Meeting: 1006, Lubbock, Texas, SS 6A, Special Session on Real Algebraic Geometry

1006-14-197 **James V Ruffo*** (jruffo@math.tamu.edu), Dept. of Mathematics, Mailstop 3368, Texas A&M University, College Station, TX 77843, and **Yuval Sivan, Evgenia Soprunova** and **Frank Sottile**. *Experimentation and conjectures in the real Schubert calculus for flag manifolds*. Preliminary report.

A Schubert problem is one of counting the number of k dimensional linear subspaces of a vector space (or, more generally, flags of such subspaces) which satisfy certain incidence conditions with respect to given “fixed” flags. The Shapiro conjecture gives a sufficient condition for a Schubert problem to have all its (a priori complex) solutions real. It fails to hold for flag manifolds, but in a very interesting way. We will describe a refinement of this conjecture for the flag manifold, present massive experimentation in its favor, and discuss its implications and some new results it has inspired. (Received February 14, 2005)