1038-55-100 **Dan Isaksen*** (`isaksen@math.wayne.edu`), Department of Mathematics, 656 W. Kirby, Wayne State University, Detroit, MI 48202. *Motivic homological algebra.* Preliminary report.

I will describe some preliminary explicit computations in motivic homotopy theory. Over arbitrary ground fields, we just don't know enough to compute much. But over the complex numbers, we have explicit descriptions (due to Voevodsky) of the cohomology of a point and of the Steenrod algebra of all cohomology operations. I will describe some computations of Ext groups over the motivic Steenrod algebra (over the complex numbers). Via the motivic Adams spectral sequence, these computations say something about motivic stable homotopy groups.

Over the real numbers, the cohomology of a point and the Steenrod algebra are also explicitly known (again due to Voevodsky). Similar Ext computations are possible over the real numbers, but the homological algebra is trickier.

I believe that these calculations will be an important guide for further research in motivic homotopy theory. (Received February 01, 2008)