1084-55-58 **Ryan H Lewis*** (me@ryanlewis.net) and **Afra Zomorodian** (afra@cs.dartmouth.edu).
Multicore Homology.

We design and implement a framework for parallel computation of homology of cellular spaces over field coefficients, by decomposing the space. Theoretically, we show that optimal decomposition into local pieces is NP-Hard. In practice, we achieve roughly an 8× speedup of homology computation on a 3-dimensional complex with about 10 million simplices using 11 cores. (Received August 15, 2012)