































To get the geometric means of Figure 2, please issue the following commands:

```
|| ./geo-mean.awk scatter.dat 3 7 0.1
|| ./geo-mean.awk scatter.dat 7 5 0.1
|| ./geo-mean.awk scatter.dat 3 5 0.1
```

By invoking `max-overhead.awk` instead of `geo-mean.awk` you can get the maximum overheads instead.

Both these scripts as arguments the name of the data file, the column over which we are normalizing, the overhead column, and the threshold below which we do not consider entries.

## A.7 Experiment customization

### A.7.1 Running HMC/GENMC

A generic invocation of GENMC looks like the following:

```
|| genmc [OPTIONS] -- [CFLAGS] <file>
```

Where CFLAGS are options that will be passed directly to the C compiler, and OPTIONS include several options that can be passed to GENMC. Among these options, the most useful ones are probably the `-unroll=N` switch, which unrolls a loop N times, and the `-wb` and `-mo` options, that enable the WB and the MO variant of GENMC, respectively (default is WB). Lastly, file should be a C file that uses pthreads for concurrency.

To use HMC, please invoke GENMC with the `-imm` option. More information regarding the usage of the tool can be found at the tool's manual (<https://github.com/MPI-SWS/genmc/tree/master/doc>).

### A.7.2 Available benchmarks

The benchmarks we used for the tables of our paper are located in the directory `~/asplos20-benchmarks/benchmarks`. Apart from the benchmarks located in the folder above, many more benchmarks can be found at GENMC's repository (<https://github.com/MPI-SWS/genmc/tree/master/tests>).

In the above repository and the relevant sub-directories, there is a separate folder for each benchmark, that contains the "core" of the test case, as well as the expected results for the test case, some arguments necessary for the test case to run, etc. In order to actually run a test case, we can run the tool with one of the test case variants, which are located in a folder named 'variants', in turn located within the respective test case's folder.

For example, assuming that GENMC's repository has been cloned at REPO, to run a simple Store Buffering (SB) test case with HMC, please issue:

```
|| genmc -imm REPO/tests/correct/synthetic/SB/variants/sb0.c
```