1086-20-179 **Persi Diaconis*** (diaconis@math.stanford.edu), Department of Statistics, Sequoia Hall, 390 Serra Mall, Stanford University, Stanford, CA 94305-4065. *On choosing coset representatives.* Preliminary report.

Normally, we try to show that the choice of coset representatives doesn't matter. But sometimes it does. Even in doing basic arithmetic, where cocycles are 'carries', the right choice can lead to less of a mess. For central extensions, Borodin, Fulman and I have shown that multiplying random elements leads to a 'carries' process which is one dependent and determinantal. Interesting groups, such as the Sylow 2-subgroup of the Suzuki group, lead to interesting point processes.Choosing coset representatives that minimize the number of carries leads to novel problems in arithmetic combinatorics, even for $\mathbb{Z}/10$ in $\mathbb{Z}/100$ (work with Shao and Soundararajan). (Received August 03, 2012)