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Danny Calegari* (dannyc@math.uchicago.edu), University of Chicago, Department of Mathematics, 5734 S. University Avenue, Chicago, IL 60637. *Random groups, diamonds and glass.*

Random groups are full of diamonds and glass.

First the diamonds: for every dimension d , there is an infinite family of convex cocompact reflection groups of isometries of hyperbolic d -space — the superideal reflection groups — with the property that a random group at any density less than a half (or in the few relators model) contains quasiconvex subgroups commensurable with some member of the family, with overwhelming probability.

Next the glass: there is a heuristic construction of random subgroups of random groups which should have different but controlled properties at different parameters of the theory. And (again, heuristically), there is a thermodynamic landscape in which groups can be tempered by repeated melting and freezing, thereby turning glass into diamonds. (Received July 27, 2014)