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Random groups contain surface subgroups

Gromov asked whether every one-ended hyperbolic group contains a subgroup isomorphic to the fundamental group of a closed surface. This question is open in general, although several classes of groups have been shown to contain surface subgroups. Perhaps the best-known example of this is [2]. I'll give some background on the question and also on the topic of random groups, and I'll sketch the proof that a random group contains many quasi-isometrically embedded surface subgroups.

References

[1] D. Calegari and A. Walker, *Random groups contain surface subgroups*, to appear in Jour Amer Math Soc.

[2] J. Kahn and V. Markovic, *Immersing almost geodesic surfaces in a closed hyperbolic three manifold*, Ann. Math. **175** (2012), no. 3, 1127–1190.