The square lattice shuffle, correction

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1 A correction

Theorem 3.6 in [1] contains an error in the stated bound. As is argued above the theorem, the statistical distance to the uniform distribution decreases by a factor

$$O((m/\log m)^{-1/2}) = O((\log n)^{1/2} n^{-1/4})$$

for every two iterations. This implies that the bound obtained for Theorem 3.6 should read

$$O(n^{1-\lfloor \frac{t-1}{2} \rfloor \frac{1}{4}} (\log n)^{\lfloor \frac{t-1}{2} \rfloor \frac{1}{2}}).$$

I am grateful to Justin Holmgren for pointing out this correction.

References

[1] Johan Håstad. The square lattice shuffle. *Random Structures & Algorithms*, 29:466–474, 2006.