

1146-60-37

**Shannon Starr\*** ([s1starr@uab.edu](mailto:s1starr@uab.edu)), UAB Department of Mathematics, Campbell Hall, 1300 University Boulevard, Birmingham, AL 35294-1170. *New examples for concentration of measure by spectral gaps*. Preliminary report.

We reconsider an old method of obtaining concentration of measure for a distribution which is invariant with respect to one step of a Markov chain. If the chain is reversible and possesses a spectral gap, then that leads to one-sided COM bounds. (This was originally noted by Aida and Stroock, and it is a section of Ledoux's monograph.) We use this method with the example in mind of the length of the longest increasing subsequence for a uniform random permutation. Our eventual goal (which we only have partial steps towards so far) is to obtain similar bounds when the measure is replaced by the Mallows measure with respect to Kendall's tau. That is because the well-known method of Talagrand, by his isoperimetric inequality, does not apply to the Mallows measure because it is not an IID product measure. (Received December 20, 2018)