1123-54-37 **Alexander Y Grosberg*** (ayg1@nyu.edu), Department of Physics, New York University, 4 Washington Place, New York, NY 10003. *Unconcatenated unknots and their minimal surfaces.*

Statistical mechanics of unconcatenated unknots is speculated to have relevance in the physics of genome folding. We look at the problem from the point of view of one-sided minimal surfaces which we computationally span on the various unknots. We found that minimal surface area for a freely fluctuating isolated unknot scales as N^x, with $x \approx 1.25$, consistent with the idea that $x = 2\nu$, where $\nu \approx 0.588$ is the well known Flory exponent for self-avoiding walks, and $N \gg 1$ is the number of segments in the loop. By contrast, similar problem for many unconcatenated unknots sharing tigt volume (so called melt of rings) we find a significantly smaller area index, $x \approx 1$, consistent with the idea of a double folded contour forming an effective tree. (Received August 05, 2016)