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Lauren Ellenberg (laellenberg@gmail.com), **Gabriella Newman** (newmang@carleton.edu)
and **Jonathan Shi** (jshi@cs.washington.edu). *A subexponential algorithm for computing the
Kauffman bracket of a link or tangle.* Preliminary report.

We prove that the Kauffman bracket polynomial of a link (and the representation of a tangle in the Kauffman bracket skein module) can be computed with time and space exponential in the square root of the number of crossings, giving explicit bounds on the costs. This involves generalizing results on the span of the Kauffman bracket to tangles, and most importantly bounding the girth of a link (or more precisely the modified girth) by a certain multiple of the square root of the number of crossings. these results should be crucial ingredients for proving similar bounds on the computation of Khovanov Homology. (Received August 03, 2012)