1119-60-162 **Jack Hanson*** (jhanson@ccny.cuny.edu), Department of Mathematics, CCNY, NAC 8/133, Convent Ave at 138th Street, New York, NY 10031. *Chemical distance in 2d percolation.*

In critical two-dimensional Bernoulli percolation, fraction 1/2 of the edges of the graph $\mathbb{Z}^2$ are erased independently. The resulting graph has connected components and "holes" appearing on all scales. As a result, the chemical (graph) distance inside large connected components is conjectured to grow superlinearly in the Euclidean distance according to a chemical distance exponent, and some results in this direction are known. For instance, the shortest crossing of the box $[-n, n]^2$ has length $S_n > n^{1+\epsilon}$ with high probability, and is no longer than the unique lowest crossing, whose length L_n is known to scale as $n^{4/3}$. Kesten and Zhang asked whether $S_n = o(L_n)$; we will discuss recent work which gives an affirmative answer to this question, as well as some results on point-to-point and point-to-box distances.

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