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Joseph E. Yukich* (joseph.yukich@lehigh.edu), Dept of Mathematics, Lehigh University,
Bethlehem, PA 18015. *Gaussian limits for random geometric structures.*

We describe general methods showing that re-normalized weighted random point measures on Poisson and binomial spatial point sets converge to a Gaussian limit with a covariance functional which depends on the underlying density of points. The methods apply to point measures whose weights satisfy a weak spatial dependence condition known as stabilization. The general results are applied to deduce Gaussian central limit theorems for measures and functionals arising in random sequential packing and ballistic deposition models, random Euclidean graphs, interacting particle systems in the continuum, and the process of maximal points. In each case the large scale limit behavior of the point measures is linked to the local behavior of the underlying density of points. This is joint work with Y. Baryshnikov and M. Penrose.

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