CLUSTERING COMPARISON OF POINT PROCESSES WITH APPLICATIONS TO PERCOLATION

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We review some results involving comparison of clustering properties of point processes. The whole approach is funded on some basic observations allowing one to consider void probabilities and moment measures as two complementary tools for capturing clustering phenomena in point processes. As expected, smaller values of these characteristics indicate less clustering. Also, various global and local functionals of random geometric models driven by point processes admit more or less explicit bounds involving the void probabilities and moment measures, thus allowing one to study the impact of clustering of the underlying point process. When stronger tools are needed, dcx ordering of point processes happens to be an appropriate choice, as well as the notion of (positive or negative) association, when comparison to the Poisson point process is concerned. We will sketch some recent results obtained using the aforementioned comparison tools, in particular regarding percolation models. Based on joint work with D. Yogeshwaran.