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Stochastic geometry and modelling of coverage and capacity in CDMA networks

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The aim of the survey is to show that stochastic geometry provides an efficient computational framework allowing one to predict characteristics of large CDMA networks such as coverage or soft-handoff level or capacity. The general idea consists in representing the location of antennas and/or mobile stations as realizations of stochastic point processes in the plane within a simple parametric class, which takes into account the irregularities of antenna/mobile patterns in a statistical way. This approach leads to new formulas and simulation schemes allowing one to compute/estimate of the spatial averages of these local characteristics in function of the model parameters (density of antennas or mobiles, law of emission power, fading law *etc.*) and to perform various parametric optimizations.