

# Sharpness of the phase transition for continuum percolation on $R^2$

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In this talk we will discuss the phase transition of random radii Poisson Boolean percolation: around each point of a planar Poisson Process, we draw a disc of random radius, independently for each point. Under mild assumptions on the radius distribution, we show that both the vacant and occupied sets undergo a phase transition at the same critical parameter. We will then explain several results on the sub-critical, super-critical and critical phases of this process, that resemble what happens for Bernoulli independent percolation. The techniques we present in this talk are general and can be applied to other models such as the Poisson Voronoi and Confetti percolation.