

PATTERNS IN RANDOM FRACTAL

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We present various results on the existence of patterns in random fractal sets. We focus on a canonical model, the fractal percolation. We characterize in terms of the dimension of the limit set A the existence of geometric configurations in A such as homothetic copies of finite sets, angles, distances, and volumes of simplices. In the spirit of relative Szemerédi theorems for random discrete sets, we also consider the corresponding problem for sets of positive measure (with respect to the natural measure on A).

Joint work with Pablo Shmerkin.