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Continuum Random Cluster Model

Joint work with David DEUREUDRE

The continuum random cluster model is defined as a Gibbs modification of the stationary Boolean model in $\mathbb{R}^d$ with positive intensity z and the law of radii Q. The formal unormalized density is given by $q^{N_{cc}}$ where q is a positive parameter and N_{cc} the number of connected components in the random germ-grain structure. In my talk I will give results of existence of the model in the infinite volume regime for a large class of parameters including the case q less than 1 or distributions Q without compact support. In the extreme setting of non integrable radii and q is an integer larger than 1, we prove that for z small enough the continuum random cluster model is not unique; two different probability measures solve the DLR equations.