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# Percolation in the final band for continuous Gibbs fields

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*The problem of percolation of the random field in the final band for continuous Gibbs fields is solved. Defect centres are set by Gibbs point field with some potential (relative to the standard Poisson measure with intensity parameter  $Z$  in the final volume). On a variety of defects' forms (with centre in the points of the Gibbs Field) the probability distribution is set. The probability distribution on the set of defects is such that it generates distribution on the point configurations of defects centres which coincides with the Gibbs distribution, and conditional distributions for forms of defects are independent, provided that the configuration of the centres of defects is fixed. Flow means that in the configuration of the defects a connected circuit of defects is found which connects the upper and lower bases of the cylinder. For sufficiently small parameters of the Poisson measure the author studied probability that the configuration does not allow the flow, as well as the asymptotic behaviour of the probability of having  $l$  circuits of flow in the configuration at certain ratios between  $S$  and  $z$ . A limit theorem of Poisson type is proved. It is shown that under certain conditions of the multiplicative nature for the shape of the cylinder and the intensity  $z$  parameter probability distribution of the number of defective circuits converges to the Poisson distribution.*

**Keywords:** *percolation, Gibbs field, defect, loop flow, limit theorems, theorems of Poisson type.*

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